

Package: CPSM (via r-universe)

June 5, 2026

Type Package

Title CPSM: Cancer patient survival model

Version 1.4.0

Description CPSM provides a comprehensive computational pipeline for predicting survival probability and risk groups in cancer patients. The package includes steps for data preprocessing, training/test split, and normalization. It enables feature selection using univariate survival analysis and computes a LASSO-based prognostic index (PI) score. CPSM supports the development of predictive models using various feature sets and offers a suite of visualization tools, including survival curves based on predicted probabilities, barplots for predicted mean and median survival times, KM plots overlaid with individual survival predictions, and nomograms for estimating 1-, 3-, 5-, and 10-year survival probabilities. This makes CPSM a versatile tool for survival analysis in cancer research.

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Encoding UTF-8

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Roxygen list(markdown = TRUE)

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Suggests knitr, rmarkdown, testthat (>= 3.0.0), BiocStyle

URL <https://github.com/hks5august/CPSM/>

BugReports <https://github.com/hks5august/CPSM/issues>

VignetteBuilder knitr

Config/testthat/edition 3

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Preprocessing, FeatureExtraction, Software, Visualization

Config/pak/sysreqs cmake libglpk-dev make libicu-dev libjpeg-dev libpng-dev libuv1-dev libxml2-
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data_process_f	<i>Data Processing function</i>
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Description

This function converting OS time (in days) into months and removing samples where OS time information is missing. Note: In the Example data OS time labelled is "OS.time" and OS event labelled as "OS"

Arguments

data	A data frame containing clinical and expression data.
col_num	An integer indicating the column number where expression data starts.
surv_time	A character string specifying the name of the survival time column in the data.

Value

A data frame combining processed clinical and expression data. Includes a new column OS_month for survival time in months, and retains only rows with positive OS_month.

Examples

```
library(SummarizedExperiment)
data(Example_TCGA_LGG_FPKM_data, package = "CPSM")
combined_df <- cbind(as.data.frame(colData(Example_TCGA_LGG_FPKM_data))
[, -ncol(colData(Example_TCGA_LGG_FPKM_data))],
t(as.data.frame(assay(Example_TCGA_LGG_FPKM_data, "expression"))))
data_process_f(data = combined_df,
  col_num = 20, surv_time = "OS.time"
)
```

Example_TCGA_LGG_FPKM_data

Example TCGA LGG FPKM data

Description

This is a data set used for the package example.

Usage

```
data("Example_TCGA_LGG_FPKM_data")
```

Format

A data frame with 184 observations on the following 2024 variables.

Age a numeric vector
subtype a character vector
gender a character vector
race a character vector
ajcc_pathologic_tumor_stage a logical vector
histological_type a character vector
histological_grade a character vector
treatment_outcome_first_course a character vector
radiation_treatment_adjuvant a character vector
sample_type a character vector
type a character vector
OS a numeric vector
OS.time a numeric vector
DSS a numeric vector
DSS.time a numeric vector
DFI a numeric vector
DFI.time a numeric vector
PFI a numeric vector
PFI.time a numeric vector
A1BG a numeric vector
A1CF a numeric vector
A2M a numeric vector
A2ML1 a numeric vector
A3GALT2 a numeric vector
A4GALT a numeric vector
A4GNT a numeric vector
AAAS a numeric vector
AACS a numeric vector
AADAC a numeric vector
AADACL2 a numeric vector
AADACL3 a numeric vector
AADACL4 a numeric vector
AADAT a numeric vector
AAGAB a numeric vector
AAK1 a numeric vector

AAMDC a numeric vector
AAMP a numeric vector
AANAT a numeric vector
AAR2 a numeric vector
AARD a numeric vector
AARS1 a numeric vector
AARS2 a numeric vector
AARSD1 a numeric vector
AASDH a numeric vector
AASDHPPT a numeric vector
AASS a numeric vector
AATF a numeric vector
AATK a numeric vector
ABAT a numeric vector
ABCA1 a numeric vector
ABCA10 a numeric vector
ABCA12 a numeric vector
ABCA13 a numeric vector
ABCA2 a numeric vector
ABCA3 a numeric vector
ABCA4 a numeric vector
ABCA5 a numeric vector
ABCA6 a numeric vector
ABCA7 a numeric vector
ABCA8 a numeric vector
ABCA9 a numeric vector
ABCB1 a numeric vector
ABCB10 a numeric vector
ABCB11 a numeric vector
ABCB4 a numeric vector
ABCB5 a numeric vector
ABCB6 a numeric vector
ABCB7 a numeric vector
ABCB8 a numeric vector
ABCB9 a numeric vector
ABCC1 a numeric vector
ABCC10 a numeric vector

ABCC11 a numeric vector
ABCC12 a numeric vector
ABCC2 a numeric vector
ABCC3 a numeric vector
ABCC4 a numeric vector
ABCC5 a numeric vector
ABCC6 a numeric vector
ABCC8 a numeric vector
ABCC9 a numeric vector
ABCD1 a numeric vector
ABCD2 a numeric vector
ABCD3 a numeric vector
ABCD4 a numeric vector
ABCE1 a numeric vector
ABCF1 a numeric vector
ABCF2 a numeric vector
'ABCF2-H2BE1' a numeric vector
ABCF3 a numeric vector
ABCG1 a numeric vector
ABCG2 a numeric vector
ABCG4 a numeric vector
ABCG5 a numeric vector
ABCG8 a numeric vector
ABHD1 a numeric vector
ABHD10 a numeric vector
ABHD11 a numeric vector
ABHD12 a numeric vector
ABHD12B a numeric vector
ABHD13 a numeric vector
ABHD14A a numeric vector
'ABHD14A-ACY1' a numeric vector
ABHD14B a numeric vector
ABHD15 a numeric vector
ABHD16A a numeric vector
ABHD16B a numeric vector
ABHD17A a numeric vector
ABHD17B a numeric vector

ABHD17C a numeric vector
ABHD18 a numeric vector
ABHD2 a numeric vector
ABHD3 a numeric vector
ABHD4 a numeric vector
ABHD5 a numeric vector
ABHD6 a numeric vector
ABHD8 a numeric vector
ABI1 a numeric vector
ABI2 a numeric vector
ABI3 a numeric vector
ABI3BP a numeric vector
ABITRAM a numeric vector
ABL1 a numeric vector
ABL2 a numeric vector
ABLIM1 a numeric vector
ABLIM2 a numeric vector
ABLIM3 a numeric vector
ABO a numeric vector
ABR a numeric vector
ABRA a numeric vector
ABRACL a numeric vector
ABRAXAS1 a numeric vector
ABRAXAS2 a numeric vector
ABT1 a numeric vector
ABTB1 a numeric vector
ABTB2 a numeric vector
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AC000120.3 a numeric vector
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AC002094.3 a numeric vector
AC002310.4 a numeric vector
AC002456.2 a numeric vector
AC002985.1 a numeric vector
AC002996.1 a numeric vector
AC003002.1 a numeric vector

AC003002.2 a numeric vector
AC003002.3 a numeric vector
AC003005.1 a numeric vector
AC003006.1 a numeric vector
AC003688.1 a numeric vector
AC004076.1 a numeric vector
AC004080.3 a numeric vector
AC004223.3 a numeric vector
AC004233.4 a numeric vector
AC004593.2 a numeric vector
AC004687.2 a numeric vector
AC004691.2 a numeric vector
AC004706.3 a numeric vector
AC004805.1 a numeric vector
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AC004922.1 a numeric vector
AC004997.1 a numeric vector
AC005020.2 a numeric vector
AC005041.1 a numeric vector
AC005154.5 a numeric vector
AC005192.1 a numeric vector
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AC005324.3 a numeric vector
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AC005551.1 a numeric vector
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AC005697.1 a numeric vector
AC005702.1 a numeric vector
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AC006059.2 a numeric vector
AC006064.6 a numeric vector

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AC006538.2 a numeric vector
AC006978.2 a numeric vector
AC007040.2 a numeric vector
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AC007375.2 a numeric vector
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AC007846.2 a numeric vector
AC007906.2 a numeric vector
AC007998.2 a numeric vector
AC008012.1 a numeric vector
AC008073.3 a numeric vector
AC008162.2 a numeric vector
AC008397.1 a numeric vector
AC008397.2 a numeric vector
AC008403.1 a numeric vector
AC008481.3 a numeric vector
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AC008581.2 a numeric vector
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AC008695.1 a numeric vector
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AC008758.5 a numeric vector
AC008758.6 a numeric vector
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AC008763.3 a numeric vector
AC008763.4 a numeric vector
AC008764.1 a numeric vector
AC008764.4 a numeric vector

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AC008770.2 a numeric vector
AC008770.4 a numeric vector
AC008878.1 a numeric vector
AC008878.2 a numeric vector
AC008878.3 a numeric vector
AC008982.1 a numeric vector
AC009070.1 a numeric vector
AC009133.6 a numeric vector
AC009163.3 a numeric vector
AC009163.5 a numeric vector
AC009412.1 a numeric vector
AC009690.1 a numeric vector
AC009690.3 a numeric vector
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AC242842.3 a numeric vector
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AC243967.1 a numeric vector
AC244197.3 a numeric vector
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AC245033.1 a numeric vector
AC245748.1 a numeric vector

AC253536.7 a numeric vector
ACAA1 a numeric vector
ACAA2 a numeric vector
ACACA a numeric vector
ACACB a numeric vector
ACAD10 a numeric vector
ACAD11 a numeric vector
ACAD8 a numeric vector
ACAD9 a numeric vector
ACADL a numeric vector
ACADM a numeric vector
ACADS a numeric vector
ACADSB a numeric vector
ACADVL a numeric vector
ACAN a numeric vector
ACAP1 a numeric vector
ACAP2 a numeric vector
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ACAT1 a numeric vector
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ACBD5 a numeric vector
ACBD6 a numeric vector
ACBD7 a numeric vector
ACCS a numeric vector
ACCSL a numeric vector
ACD a numeric vector
ACE a numeric vector
ACE2 a numeric vector
ACER1 a numeric vector
ACER2 a numeric vector
ACER3 a numeric vector
ACHE a numeric vector
ACIN1 a numeric vector
ACKR1 a numeric vector
ACKR2 a numeric vector

ACKR3 a numeric vector
ACKR4 a numeric vector
ACLY a numeric vector
ACMSD a numeric vector
AC01 a numeric vector
AC02 a numeric vector
ACOD1 a numeric vector
ACOT1 a numeric vector
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ACOT2 a numeric vector
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ACOT7 a numeric vector
ACOT8 a numeric vector
ACOT9 a numeric vector
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ACOX2 a numeric vector
ACOX3 a numeric vector
ACOXL a numeric vector
ACP1 a numeric vector
ACP2 a numeric vector
ACP3 a numeric vector
ACP4 a numeric vector
ACP5 a numeric vector
ACP6 a numeric vector
ACP7 a numeric vector
ACR a numeric vector
ACRBP a numeric vector
ACRV1 a numeric vector
ACSBG1 a numeric vector
ACSBG2 a numeric vector
ACSF2 a numeric vector
ACSF3 a numeric vector
ACSL1 a numeric vector
ACSL3 a numeric vector

ACSL4 a numeric vector
ACSL5 a numeric vector
ACSL6 a numeric vector
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ACSM2A a numeric vector
ACSM2B a numeric vector
ACSM3 a numeric vector
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ACSM6 a numeric vector
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ACSS3 a numeric vector
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ACTB a numeric vector
ACTBL2 a numeric vector
ACTC1 a numeric vector
ACTG1 a numeric vector
ACTG2 a numeric vector
ACTL10 a numeric vector
ACTL6A a numeric vector
ACTL6B a numeric vector
ACTL7A a numeric vector
ACTL7B a numeric vector
ACTL8 a numeric vector
ACTL9 a numeric vector
ACTN1 a numeric vector
ACTN2 a numeric vector
ACTN3 a numeric vector
ACTN4 a numeric vector
ACTR10 a numeric vector
ACTR1A a numeric vector
ACTR1B a numeric vector
ACTR2 a numeric vector
ACTR3 a numeric vector
ACTR3B a numeric vector

ACTR3C a numeric vector
ACTR5 a numeric vector
ACTR6 a numeric vector
ACTR8 a numeric vector
ACTRT1 a numeric vector
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ACTRT3 a numeric vector
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ACVR1C a numeric vector
ACVR2A a numeric vector
ACVR2B a numeric vector
ACVRL1 a numeric vector
ACY1 a numeric vector
ACY3 a numeric vector
ACYP1 a numeric vector
ACYP2 a numeric vector
AD000671.1 a numeric vector
AD000671.2 a numeric vector
ADA a numeric vector
ADA2 a numeric vector
ADAD1 a numeric vector
ADAD2 a numeric vector
ADAL a numeric vector
ADAM10 a numeric vector
ADAM11 a numeric vector
ADAM12 a numeric vector
ADAM15 a numeric vector
ADAM17 a numeric vector
ADAM18 a numeric vector
ADAM19 a numeric vector
ADAM2 a numeric vector
ADAM20 a numeric vector
ADAM21 a numeric vector
ADAM22 a numeric vector
ADAM23 a numeric vector
ADAM28 a numeric vector

ADAM29 a numeric vector
ADAM30 a numeric vector
ADAM32 a numeric vector
ADAM33 a numeric vector
ADAM7 a numeric vector
ADAM8 a numeric vector
ADAM9 a numeric vector
ADAMDEC1 a numeric vector
ADAMTS1 a numeric vector
ADAMTS10 a numeric vector
ADAMTS12 a numeric vector
ADAMTS13 a numeric vector
ADAMTS14 a numeric vector
ADAMTS15 a numeric vector
ADAMTS16 a numeric vector
ADAMTS17 a numeric vector
ADAMTS18 a numeric vector
ADAMTS19 a numeric vector
ADAMTS2 a numeric vector
ADAMTS20 a numeric vector
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ADAMTSL5 a numeric vector
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ADARB2 a numeric vector

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ADAT2 a numeric vector
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ADCK5 a numeric vector
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ADCY5 a numeric vector
ADCY6 a numeric vector
ADCY7 a numeric vector
ADCY8 a numeric vector
ADCY9 a numeric vector
ADCYAP1 a numeric vector
ADCYAP1R1 a numeric vector
ADD1 a numeric vector
ADD2 a numeric vector
ADD3 a numeric vector
ADGB a numeric vector
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ART5 a numeric vector
ARTN a numeric vector
ARV1 a numeric vector
ARVCF a numeric vector
ARX a numeric vector
AS3MT a numeric vector
ASAH1 a numeric vector
ASAH2 a numeric vector
ASAH2B a numeric vector
ASAP1 a numeric vector
ASAP2 a numeric vector
ASAP3 a numeric vector
ASB1 a numeric vector
ASB10 a numeric vector
ASB11 a numeric vector
ASB12 a numeric vector

ASB13 a numeric vector
ASB14 a numeric vector
ASB15 a numeric vector
ASB16 a numeric vector
ASB17 a numeric vector
ASB18 a numeric vector
ASB2 a numeric vector
ASB3 a numeric vector
ASB4 a numeric vector
ASB5 a numeric vector
ASB6 a numeric vector
ASB7 a numeric vector
ASB8 a numeric vector
ASB9 a numeric vector
ASCC1 a numeric vector
ASCC2 a numeric vector
ASCC3 a numeric vector
ASCL1 a numeric vector
ASCL2 a numeric vector
ASCL3 a numeric vector
ASCL4 a numeric vector
ASCL5 a numeric vector
ASDURF a numeric vector
ASF1A a numeric vector
ASF1B a numeric vector
ASGR1 a numeric vector
ASGR2 a numeric vector
ASH1L a numeric vector
ASH2L a numeric vector
ASIC1 a numeric vector
ASIC2 a numeric vector
ASIC3 a numeric vector
ASIC4 a numeric vector
ASIC5 a numeric vector
ASIP a numeric vector
ASL a numeric vector
ASMT a numeric vector

ASMTL a numeric vector
ASNS a numeric vector
ASNSD1 a numeric vector
ASPA a numeric vector
ASPDH a numeric vector
ASPG a numeric vector
ASPH a numeric vector
ASPHD1 a numeric vector
ASPHD2 a numeric vector
ASPM a numeric vector
ASPN a numeric vector
ASPRV1 a numeric vector
ASPSCR1 a numeric vector
ASRGL1 a numeric vector
ASS1 a numeric vector
ASTE1 a numeric vector
ASTL a numeric vector
ASTN1 a numeric vector
ASTN2 a numeric vector
ASXL1 a numeric vector
ASXL2 a numeric vector
ASXL3 a numeric vector
ASZ1 a numeric vector
ATAD1 a numeric vector
ATAD2 a numeric vector
ATAD2B a numeric vector
ATAD3A a numeric vector
ATAD3B a numeric vector
ATAD3C a numeric vector
ATAD5 a numeric vector
ATAT1 a numeric vector
ATCAY a numeric vector
ATE1 a numeric vector
ATF1 a numeric vector
ATF2 a numeric vector
ATF3 a numeric vector
ATF4 a numeric vector

ATF5 a numeric vector
ATF6 a numeric vector
ATF6B a numeric vector
ATF7 a numeric vector
'ATF7-NPFF' a numeric vector
ATF7IP a numeric vector
ATF7IP2 a numeric vector
ATG10 a numeric vector
ATG101 a numeric vector
ATG12 a numeric vector
ATG13 a numeric vector
ATG14 a numeric vector
ATG16L1 a numeric vector
ATG16L2 a numeric vector
ATG2A a numeric vector
ATG2B a numeric vector
ATG3 a numeric vector
ATG4A a numeric vector
ATG4B a numeric vector
ATG4C a numeric vector
ATG4D a numeric vector
ATG5 a numeric vector
ATG7 a numeric vector
ATG9A a numeric vector
ATG9B a numeric vector
ATIC a numeric vector
ATL1 a numeric vector
ATL2 a numeric vector
ATL3 a numeric vector
ATM a numeric vector
ATMIN a numeric vector
ATN1 a numeric vector
ATOH1 a numeric vector
ATOH7 a numeric vector
ATOH8 a numeric vector
ATOX1 a numeric vector
ATP10A a numeric vector

ATP10B a numeric vector
ATP10D a numeric vector
ATP11A a numeric vector
ATP11B a numeric vector
ATP11C a numeric vector
ATP12A a numeric vector
ATP13A1 a numeric vector
ATP13A2 a numeric vector
ATP13A3 a numeric vector
ATP13A4 a numeric vector
ATP13A5 a numeric vector
ATP1A1 a numeric vector
ATP1A2 a numeric vector
ATP1A3 a numeric vector
ATP1A4 a numeric vector
ATP1B1 a numeric vector
ATP1B2 a numeric vector
ATP1B3 a numeric vector
ATP1B4 a numeric vector
ATP23 a numeric vector
ATP2A1 a numeric vector
ATP2A2 a numeric vector
ATP2A3 a numeric vector
ATP2B1 a numeric vector
ATP2B2 a numeric vector
ATP2B3 a numeric vector
ATP2B4 a numeric vector
ATP2C1 a numeric vector
ATP2C2 a numeric vector
ATP4A a numeric vector
ATP4B a numeric vector
ATP5F1A a numeric vector
ATP5F1B a numeric vector
ATP5F1C a numeric vector
ATP5F1D a numeric vector
ATP5F1E a numeric vector
ATP5IF1 a numeric vector

ATP5MC1 a numeric vector
ATP5MC2 a numeric vector
ATP5MC3 a numeric vector
ATP5MD a numeric vector
ATP5ME a numeric vector
ATP5MF a numeric vector
'ATP5MF-PTCD1' a numeric vector
ATP5MG a numeric vector
ATP5MGL a numeric vector
ATP5MPL a numeric vector
ATP5PB a numeric vector
ATP5PD a numeric vector
ATP5PF a numeric vector
ATP5P0 a numeric vector
ATP6AP1 a numeric vector
ATP6AP1L a numeric vector
ATP6AP2 a numeric vector
ATP6V0A1 a numeric vector
ATP6V0A2 a numeric vector
ATP6V0A4 a numeric vector
ATP6V0B a numeric vector
ATP6V0C a numeric vector
ATP6V0D1 a numeric vector
ATP6V0D2 a numeric vector
ATP6V0E1 a numeric vector
ATP6V0E2 a numeric vector
ATP6V1A a numeric vector
ATP6V1B1 a numeric vector
ATP6V1B2 a numeric vector
ATP6V1C1 a numeric vector
ATP6V1C2 a numeric vector
ATP6V1D a numeric vector
ATP6V1E1 a numeric vector
ATP6V1E2 a numeric vector
ATP6V1F a numeric vector
ATP6V1FNB a numeric vector
ATP6V1G1 a numeric vector

ATP6V1G2 a numeric vector
'ATP6V1G2-DDX39B' a numeric vector
ATP6V1G3 a numeric vector
ATP6V1H a numeric vector
ATP7A a numeric vector
ATP7B a numeric vector
ATP8A1 a numeric vector
ATP8A2 a numeric vector
ATP8B1 a numeric vector
ATP8B2 a numeric vector
ATP8B3 a numeric vector
ATP8B4 a numeric vector
ATP9A a numeric vector
ATP9B a numeric vector
ATPAF1 a numeric vector
ATPAF2 a numeric vector
ATPSCKMT a numeric vector
ATR a numeric vector
ATRAID a numeric vector
ATRIP a numeric vector
ATRN a numeric vector
ATRNL1 a numeric vector
ATRX a numeric vector
ATXN1 a numeric vector
ATXN10 a numeric vector
ATXN1L a numeric vector
ATXN2 a numeric vector
ATXN2L a numeric vector
ATXN3 a numeric vector
ATXN3L a numeric vector
ATXN7 a numeric vector
ATXN7L1 a numeric vector
ATXN7L2 a numeric vector
ATXN7L3 a numeric vector
ATXN7L3B a numeric vector
AUH a numeric vector
AUNIP a numeric vector

AUP1 a numeric vector
AURKA a numeric vector
AURKAIP1 a numeric vector
AURKB a numeric vector
AURKC a numeric vector
AUTS2 a numeric vector
AVEN a numeric vector
AVIL a numeric vector
AVL9 a numeric vector
AVP a numeric vector
AVPI1 a numeric vector
AVPR1A a numeric vector
AVPR1B a numeric vector
AVPR2 a numeric vector
AWAT1 a numeric vector
AWAT2 a numeric vector
AXDND1 a numeric vector
AXIN1 a numeric vector
AXIN2 a numeric vector
AXL a numeric vector
AZGP1 a numeric vector
AZI2 a numeric vector
AZIN1 a numeric vector
AZIN2 a numeric vector
AZU1 a numeric vector
B2M a numeric vector
B3GALNT1 a numeric vector
B3GALNT2 a numeric vector
B3GALT1 a numeric vector
B3GALT2 a numeric vector
B3GALT4 a numeric vector
B3GALT5 a numeric vector
B3GALT6 a numeric vector
B3GAT1 a numeric vector
B3GAT2 a numeric vector
B3GAT3 a numeric vector
B3GLCT a numeric vector

B3GNT10 a numeric vector
B3GNT2 a numeric vector
B3GNT3 a numeric vector
B3GNT4 a numeric vector
B3GNT5 a numeric vector
B3GNT6 a numeric vector
B3GNT7 a numeric vector
B3GNT8 a numeric vector
B3GNT9 a numeric vector
B3GNTL1 a numeric vector
B4GALNT1 a numeric vector
B4GALNT2 a numeric vector
B4GALNT3 a numeric vector
B4GALNT4 a numeric vector
B4GALT1 a numeric vector
B4GALT2 a numeric vector
B4GALT3 a numeric vector
B4GALT4 a numeric vector
B4GALT5 a numeric vector
B4GALT6 a numeric vector
B4GALT7 a numeric vector
B4GAT1 a numeric vector
B9D1 a numeric vector
B9D2 a numeric vector
BAALC a numeric vector
BAAT a numeric vector
BABAM1 a numeric vector
BABAM2 a numeric vector
BACE1 a numeric vector
BACE2 a numeric vector
BACH1 a numeric vector
BACH2 a numeric vector
BAD a numeric vector
BAG1 a numeric vector
BAG2 a numeric vector
BAG3 a numeric vector
BAG4 a numeric vector

BAG5 a numeric vector
BAG6 a numeric vector
BAHCC1 a numeric vector
BAHD1 a numeric vector
BAIAP2 a numeric vector
BAIAP2L1 a numeric vector
BAIAP2L2 a numeric vector
BAIAP3 a numeric vector
BAK1 a numeric vector
BAMBI a numeric vector
BANF1 a numeric vector
BANF2 a numeric vector
BANK1 a numeric vector
BANP a numeric vector
BAP1 a numeric vector
BARD1 a numeric vector
BARHL1 a numeric vector
BARHL2 a numeric vector
BARX1 a numeric vector
BARX2 a numeric vector
BASP1 a numeric vector
BATF a numeric vector
BATF2 a numeric vector
BATF3 a numeric vector
BAX a numeric vector
BAZ1A a numeric vector
BAZ1B a numeric vector
BAZ2A a numeric vector

Details

This is a GBM dataset.

Value

Returns a data frame and a plot.

Source

<https://portal.gdc.cancer.gov/>

References

Das P, Roychowdhury A, Das S, Roychoudhury S, Tripathy S (2020). “sigFeature: Novel Significant Feature Selection Method for Classification of Gene Expression Data Using Support Vector Machine and t Statistic.” *Frontiers in genetics*, 11, 247. doi:10.3389/fgene.2020.00247, <https://www.frontiersin.org/article/10>

Examples

```
data(Example_TCGA_LGG_FPKM_data)
## maybe str(Example_TCGA_LGG_FPKM_data) ; plot(Example_TCGA_LGG_FPKM_data)
```

```
feature_list_for_Nomogram
      feature list for Nomogram
```

Description

This is feature list for Nomogram.

Usage

```
data("feature_list_for_Nomogram")
```

Format

A data frame with 6 observations on the following variable.

ID a character vector

Details

This is feature list for Nomogram.

Value

Returns a plot.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(feature_list_for_Nomogram)
## maybe str(feature_list_for_Nomogram)
## plot(feature_list_for_Nomogram)
```

Key_Clin_feature_list *Key Clin feature list*

Description

This is Key Clin feature list.

Usage

```
data("Key_Clin_feature_list")
```

Format

A data frame with 8 observations on the following variable.

ID a character vector

Details

This is Key Clin feature list.

Value

Returns a feature list.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(Key_Clin_feature_list)
## maybe str(Key_Clin_feature_list)
```

Key_Clin_features_with_PI_list
Key Clin features with PI list

Description

This is Key Clin features with PI list.

Usage

```
data("Key_Clin_features_with_PI_list")
```

Format

A data frame with 9 observations on the following variable.

ID a character vector

Details

This is Key Clin features with PI list.

Value

Returns a feature list.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(Key_Clin_features_with_PI_list)
## maybe str(Key_Clin_features_with_PI_list)
```

Key_PI_list

Key PI list

Description

This is Key PI list.

Usage

```
data("Key_PI_list")
```

Format

A data frame with 1 observations on the following variable.

ID a character vector

Details

This is Key PI list.

Value

Returns a feature list.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(Key_PI_list)
## maybe str(Key_PI_list)
```

```
Key_univariate_features_list
```

Key univariate features list

Description

This is Key univariate features list.

Usage

```
data("Key_univariate_features_list")
```

Format

A data frame with 2391 observations on the following variable.

ID a character vector

Details

This is Key univariate features list.

Value

Returns a feature list.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(Key_univariate_features_list)
## maybe str(Key_univariate_features_list)
```

Key_univariate_features_with_Clin_list
Key univariate features with Clin list

Description

This is Key univariate features with Clin list.

Usage

```
data("Key_univariate_features_with_Clin_list")
```

Format

A data frame with 2399 observations on the following variable.

ID a character vector

Details

This is Key univariate features with Clin list.

Value

Returns a feature list.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(Key_univariate_features_with_Clin_list)
## maybe str(Key_univariate_features_with_Clin_list)
```

km_overlay_plot_f *Overlay Kaplan-Meier Plot Function*

Description

This function generates an overlaid Kaplan-Meier (KM) survival plot to visualize the survival curves of training data stratified by predicted risk groups (e.g., High Risk vs Low Risk), along with the survival curve of a selected test sample. It helps to visually assess how the test sample's predicted survival aligns with the survival profiles of the training groups.

Arguments

- Train_results** A data frame containing the training samples' survival prediction results (obtained from RF risk prediction model). The following columns are required:
- **Sample_ID**: Unique identifier for the sample.
 - **Actual**: Actual TCGA ID (often the same as **Sample_ID**).
 - **Predicted_Risk_Group**: Predicted class label (e.g., High_Risk / Low_Risk).
 - **High_Risk_Prob**: Probability of being classified as High Risk.
 - **Low_Risk_Prob**: Probability of being classified as Low Risk.
 - **Prediction_Prob**: Maximum class probability (confidence in the prediction).
 - **OS_month**: Overall survival time in months.
 - **OS_event**: Event indicator (1 = death, 0 = censored). The data frame should have no duplicate **Sample_IDs**, and the **OS_month** column should be numeric while **OS_event** should be an integer.
- Test_results** A data frame containing the test samples' survival prediction results (obtained from RF risk prediction model). The structure is similar to **Train_results**, with the following columns:
- **Sample_ID**: Unique identifier for the sample.
 - **Actual**: Actual TCGA ID (often the same as **Sample_ID**).
 - **Predicted_Risk_Group**: Predicted class label (e.g., High_Risk / Low_Risk).
 - **High_Risk_Prob**: Probability of being classified as High Risk.
 - **Low_Risk_Prob**: Probability of being classified as Low Risk.
 - **Prediction_Prob**: Maximum class probability (confidence in the prediction).
 - **OS_month**: Overall survival time in months.
 - **OS_event**: Event indicator (1 = death, 0 = censored). The data frame should have no duplicate **Sample_IDs**, and the **OS_month** column should be numeric while **OS_event** should be an integer. The **Sample_ID** of the **selected_sample** must be present in this data frame.
- survcurve_te_data** A data frame containing survival probability curves for test samples. It should include:
- **time_point**: Time points for survival estimates.
 - **<Sample_ID columns>**: Survival probabilities for each sample at each time point.
- selected_sample** The **Sample_ID** of the selected test sample for which the user wants to plot the overlaid Kaplan-Meier plot. The **Sample_ID** should be present in the **Test_results** data frame.
- font_size** Numeric. Base font size for the plot text (axis labels, legend, and title). Default is 12.
- train_palette** Character vector of colors for training group curves (e.g., `c("red", "blue")`). Default is `c("red", "blue")`.

`test_line_col` Character. Color of the overlaid test sample curve. Default is "darkgreen".
`test_line_type` Character. Line type of the overlaid test sample curve (e.g., "dashed", "solid"). Default is "dashed".

Value

A ggplot object (from ggsurvplot) showing:

- Kaplan-Meier survival curves for the training dataset, stratified by predicted risk group.
- An overlaid survival curve for the selected test sample (in a dashed green line).
- Annotations displaying the test sample's predicted risk group and prediction probability.

Examples

```
# Example usage of the km_overlay_plot_f function

# Example Train_results data frame
# Load example data included in the package
data(Train_results, package = "CPSM")
data(Test_results, package = "CPSM")
data(survCurves_data, package = "CPSM")

# Generate Kaplan-Meier plot with overlay
KM_plot_results <- km_overlay_plot_f(
  Train_results = Train_results,
  Test_results = Test_results,
  survcurve_te_data = survCurves_data,
  selected_sample = "TCGA-TQ-A7RQ-01",
  font_size = 14,
  train_palette = c("purple", "orange"),
  test_curve_col = "black",
  test_curve_lty = "solid"
)
```

Lasso_PI_scores_f *Lasso-Based Prognostic Index Calculation*

Description

Lasso-Based Prognostic Index Calculation

Usage

```
Lasso_PI_scores_f(
  train_data,
  test_data,
  nfolds,
```

```

    col_num,
    surv_time,
    surv_event,
    n_repeats,
    alpha,
    freq_threshold = 0.6
  )

```

Arguments

<code>train_data</code>	A data frame containing the training data, including survival time, event status, and features.
<code>test_data</code>	A data frame containing the test data, including survival time, event status, and features.
<code>nfolds</code>	An integer specifying the number of cross-validation folds for LASSO.
<code>col_num</code>	An integer indicating the starting column index for the feature variables.
<code>surv_time</code>	A character string specifying the column name for survival time in the data.
<code>surv_event</code>	A character string specifying the column name for survival event status in the data.
<code>n_repeats</code>	An integer specifying how many times repeated CV should be run to assess feature selection stability.
<code>alpha</code>	A numeric value (0–1) specifying the mixing parameter for Elastic Net (1 = LASSO, $0 < \alpha < 1$ = Elastic Net).
<code>freq_threshold</code>	Numeric value between 0 and 1. Minimum selection frequency required to retain a feature across repeated LASSO runs (e.g., 0.6 keeps features selected in > 60% of repeats).

Details

The function first checks the validity of input data. It renames the survival time and event columns in the training and test datasets, then fits a Cox proportional hazards model using Lasso regularization via cross-validation. Based on the Lasso model, the function calculates the prognostic index (PI) for both the training and test datasets, appending the PI values to the original data frames.

Value

A list with the following components:

- `Train_Lasso_key_variables`: A data frame of selected key variables and their coefficients.
- `Train_PI_data`: A data frame with training data, including survival time, event status, and PI.
- `Test_PI_data`: A data frame with test data, including survival time, event status, and PI.
- `cvfit`: A `cv.glmnet` object representing the fitted LASSO Cox model.
- `Stability_table`: A data frame showing each feature and the proportion of repeated CV runs in which it was selected (selection frequency).

Examples

```

data(Train_Norm_data, package = "CPSM")
data(Test_Norm_data, package = "CPSM")
Result_PI <- Lasso_PI_scores_f(
  train_data = Train_Norm_data,
  test_data = Test_Norm_data,
  nfolds = 5,
  col_num = 21,
  n_repeats = 10,
  alpha = 1,
  freq_threshold = 0.6,
  surv_time = "OS_month",
  surv_event = "OS")

```

mean_median_surv_barplot_f

Mean and Median Survival Bar Plot

Description

This function generate barplots for mean and median survival of patients. Besides, user can also highlight one specific sample by providing sample IDs

Arguments

surv_mean_med_data	:args1 - Predicted Mean median survival time data for patients
selected_sample	:args2 - ID of the sample for which user want to highlight in the plot.
font_size	Numeric: Font size for axis text and labels (default = 8)
font_color	Character: Font color for text/labels (default = "black")
bar_colors	Named vector: Custom bar colors for highlighted and other patients. Defaults to: c("TRUE.Mean" = "red", "TRUE.Median" = "blue", "FALSE.Mean" = "lightgray", "FALSE.Median" = "darkgray")

Value

A list containing two ggplot objects:

- mean_med_all_pat: Bar plot of mean and median survival times for all patients.
- highlighted_selected_pat: Bar plot highlighting the selected patient's mean and median survival times with distinct colors.

Examples

```
data(mean_median_survival_time_data, package = "CPSM")
mean_median_surv_barplot_f(
  surv_mean_med_data =
    mean_median_survival_time_data,
  selected_sample = "TCGA-TQ-A7RQ-01",
  font_size = 10,
  font_color = "darkblue",
  bar_colors = c("TRUE.Mean" = "green", "TRUE.Median" = "purple",
                "FALSE.Mean" = "lightblue", "FALSE.Median" = "gray70")
)
```

```
mean_median_survival_time_data
      mean median survival time data
```

Description

This is mean median survival time data.

Usage

```
data("mean_median_survival_time_data")
```

Format

A data frame with 18 observations on the following 3 variables.

IDs a character vector

Mean a numeric vector

Median a numeric vector

Details

This is mean median survival time data.

Value

Data which is used for plot.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(mean_median_survival_time_data)
# maybe str(mean_median_survival_time_data)
# plot(mean_median_survival_time_data)
```

MTLR_pred_model_f *MTLR Prediction Model Function*

Description

This function builds a Multi-Task Logistic Regression (MTLR) survival model based on clinical or selected feature or their combinations. It can handle various model types based on user input (e.g., Clinical features only, Clinical features with PI score, selected genes set).

Usage

```
MTLR_pred_model_f(
  train_clin_data,
  test_clin_data,
  Model_type,
  train_features_data,
  test_features_data,
  Clin_Feature_List,
  surv_time,
  surv_event,
  nfold = 5
)
```

Arguments

train_clin_data A data frame containing the clinical data for the training set.

test_clin_data A data frame containing the clinical data for the test set.

Model_type An integer indicating the model type:

- 1: Clinical features model
- 2: PI score model
- 3: PI score with Clinical features model
- 4: selected gene set or clinical with selected gene set based model

train_features_data A data frame containing the feature data for the training set.

test_features_data A data frame containing the feature data for the test set.

Clin_Feature_List A list of clinical features to be used in the model.

surv_time A string specifying the name of the survival time column.

surv_event A string specifying the name of the survival event column.

nfold An integer specifying the number of folds for cross-validation. Default is 5.

Value

A list containing the following components:

Model	The fitted MTLR model.
Error_matrix	A matrix of error evaluation metrics (C-index and MAE) for training and test sets.
Survival_predictions	Predicted survival probabilities, mean survival times, and median survival times.
Model_type	The model type selected by the user.

Examples

```
# Example usage of the MTLR_pred_model_f function
data(Train_Clin, package = "CPSM")
data(Test_Clin, package = "CPSM")
data(Key_Clin_feature_list, package = "CPSM")
result <- MTLR_pred_model_f(
  train_clin_data = Train_Clin,
  test_clin_data = Test_Clin,
  Model_type = 1,
  train_features_data = Train_Clin,
  test_features_data = Test_Clin,
  Clin_Feature_List = Key_Clin_feature_list,
  surv_time = "OS_month",
  surv_event = "OS",
  nfold = 5
)
```

New_data

New_data

Description

This is New data.

Usage

```
data("New_data")
```

Format

A data frame with 176 observations on the following 2025 variables.

Age a numeric vector

subtype a character vector

gender a character vector

race a character vector
ajcc_pathologic_tumor_stage a logical vector
histological_type a character vector
histological_grade a character vector
treatment_outcome_first_course a character vector
radiation_treatment_adjuvant a character vector
sample_type a character vector
type a character vector
OS a numeric vector
OS.time a numeric vector
DSS a numeric vector
DSS.time a numeric vector
DFI a numeric vector
DFI.time a numeric vector
PFI a numeric vector
PFI.time a numeric vector
OS_month a numeric vector
A1BG a numeric vector
A1CF a numeric vector
A2M a numeric vector
A2ML1 a numeric vector
A3GALT2 a numeric vector
A4GALT a numeric vector
A4GNT a numeric vector
AAAS a numeric vector
AACS a numeric vector
AADAC a numeric vector
AADACL2 a numeric vector
AADACL3 a numeric vector
AADACL4 a numeric vector
AADAT a numeric vector
AAGAB a numeric vector
AAK1 a numeric vector
AAMDC a numeric vector
AAMP a numeric vector
AANAT a numeric vector
AAR2 a numeric vector

AARD a numeric vector
AARS1 a numeric vector
AARS2 a numeric vector
AARSD1 a numeric vector
AASDH a numeric vector
AASDHPPT a numeric vector
AASS a numeric vector
AATF a numeric vector
AATK a numeric vector
ABAT a numeric vector
ABCA1 a numeric vector
ABCA10 a numeric vector
ABCA12 a numeric vector
ABCA13 a numeric vector
ABCA2 a numeric vector
ABCA3 a numeric vector
ABCA4 a numeric vector
ABCA5 a numeric vector
ABCA6 a numeric vector
ABCA7 a numeric vector
ABCA8 a numeric vector
ABCA9 a numeric vector
ABCB1 a numeric vector
ABCB10 a numeric vector
ABCB11 a numeric vector
ABCB4 a numeric vector
ABCB5 a numeric vector
ABCB6 a numeric vector
ABCB7 a numeric vector
ABCB8 a numeric vector
ABCB9 a numeric vector
ABCC1 a numeric vector
ABCC10 a numeric vector
ABCC11 a numeric vector
ABCC12 a numeric vector
ABCC2 a numeric vector
ABCC3 a numeric vector

ABCC4 a numeric vector
ABCC5 a numeric vector
ABCC6 a numeric vector
ABCC8 a numeric vector
ABCC9 a numeric vector
ABCD1 a numeric vector
ABCD2 a numeric vector
ABCD3 a numeric vector
ABCD4 a numeric vector
ABCE1 a numeric vector
ABCF1 a numeric vector
ABCF2 a numeric vector
ABCF2.H2BE1 a numeric vector
ABCF3 a numeric vector
ABCG1 a numeric vector
ABCG2 a numeric vector
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AUTS2 a numeric vector
AVEN a numeric vector
AVIL a numeric vector
AVL9 a numeric vector
AVP a numeric vector
AVPI1 a numeric vector
AVPR1A a numeric vector
AVPR1B a numeric vector
AVPR2 a numeric vector
AWAT1 a numeric vector
AWAT2 a numeric vector
AXDND1 a numeric vector
AXIN1 a numeric vector
AXIN2 a numeric vector
AXL a numeric vector
AZGP1 a numeric vector
AZI2 a numeric vector
AZIN1 a numeric vector
AZIN2 a numeric vector
AZU1 a numeric vector
B2M a numeric vector
B3GALNT1 a numeric vector
B3GALNT2 a numeric vector
B3GALT1 a numeric vector
B3GALT2 a numeric vector
B3GALT4 a numeric vector
B3GALT5 a numeric vector
B3GALT6 a numeric vector
B3GAT1 a numeric vector
B3GAT2 a numeric vector
B3GAT3 a numeric vector
B3GLCT a numeric vector
B3GNT10 a numeric vector
B3GNT2 a numeric vector
B3GNT3 a numeric vector
B3GNT4 a numeric vector

B3GNT5 a numeric vector
B3GNT6 a numeric vector
B3GNT7 a numeric vector
B3GNT8 a numeric vector
B3GNT9 a numeric vector
B3GNTL1 a numeric vector
B4GALNT1 a numeric vector
B4GALNT2 a numeric vector
B4GALNT3 a numeric vector
B4GALNT4 a numeric vector
B4GALT1 a numeric vector
B4GALT2 a numeric vector
B4GALT3 a numeric vector
B4GALT4 a numeric vector
B4GALT5 a numeric vector
B4GALT6 a numeric vector
B4GALT7 a numeric vector
B4GAT1 a numeric vector
B9D1 a numeric vector
B9D2 a numeric vector
BAALC a numeric vector
BAAT a numeric vector
BABAM1 a numeric vector
BABAM2 a numeric vector
BACE1 a numeric vector
BACE2 a numeric vector
BACH1 a numeric vector
BACH2 a numeric vector
BAD a numeric vector
BAG1 a numeric vector
BAG2 a numeric vector
BAG3 a numeric vector
BAG4 a numeric vector
BAG5 a numeric vector
BAG6 a numeric vector
BAHCC1 a numeric vector
BAHD1 a numeric vector

BAIAP2 a numeric vector
BAIAP2L1 a numeric vector
BAIAP2L2 a numeric vector
BAIAP3 a numeric vector
BAK1 a numeric vector
BAMBI a numeric vector
BANF1 a numeric vector
BANF2 a numeric vector
BANK1 a numeric vector
BANP a numeric vector
BAP1 a numeric vector
BARD1 a numeric vector
BARHL1 a numeric vector
BARHL2 a numeric vector
BARX1 a numeric vector
BARX2 a numeric vector
BASP1 a numeric vector
BATF a numeric vector
BATF2 a numeric vector
BATF3 a numeric vector
BAX a numeric vector
BAZ1A a numeric vector
BAZ1B a numeric vector
BAZ2A a numeric vector

Details

This is New data.

Value

Retuens a dataframe.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(New_data)  
## maybe str(New_data)  
## plot(New_data)
```

 Nomogram_generate_f *Nomogram Generation Function*

Description

Nomogram Generation Function

Usage

```
Nomogram_generate_f(
  data,
  Feature_List,
  surv_time,
  surv_event,
  font_size = 0.8,
  axis_cex = 0.5,
  tcl_len = 0.5,
  label_margin = 0.5,
  col_grid = gray(c(0.85, 0.95))
)
```

Arguments

data	A data frame containing survival information and predictor variables. Must include columns for survival time, event status, and selected features.
Feature_List	A data frame or list containing the selected features (column names) to be included in the nomogram.
surv_time	A character string specifying the column name for survival time in the input data.
surv_event	A character string specifying the column name for survival event status in the input data (1 for event, 0 for censored).
font_size	Numeric. Base font size for the nomogram plot. Default is 0.8
axis_cex	Numeric. Scaling factor for axis text size (cex.axis). Default is 0.5
tcl_len	Numeric. Tick length on axes (tcl). Default is 0.5
label_margin	Numeric. Margin for variable labels (lmgp). Default is 0.5
col_grid	Color vector. Grid line colors for the nomogram plot. Default is gray(c(0.85, 0.95))

Details

The function dynamically creates a Cox proportional hazards model based on the selected features and survival data. It computes survival probabilities for 1, 3, 5, and 10 years (if applicable) and plots the nomogram. The function uses internal validation with bootstrapping (B = 1000) to calculate the bias-corrected C-index.

Value

A list containing:

- `C_index_mat`: A matrix containing the bias-corrected and original C-index values.

The following steps are performed:

- Validates input data and renames survival columns to standard names.
- Prepares the data for modeling using `rms::datadist`.
- Dynamically creates a Cox proportional hazards model formula.
- Fits the Cox model using `rms::cph`.
- Generates the nomogram with survival probabilities at specified time points.
- Validates the model and computes C-index values.

Examples

```
data(Train_Data_Nomogram_input, package = "CPSM")
data(feature_list_for_Nomogram, package = "CPSM")
Nomogram_generate_f(
  data = Train_Data_Nomogram_input,
  Feature_List = feature_list_for_Nomogram,
  surv_time = "OS_month",
  surv_event = "OS",
  font_size = 0.8,
  axis_cex = 0.5,
  tcl_len = 0.5,
  label_margin = 0.5,
  col_grid = gray(c(0.85, 0.95))
)
```

predict_survival_risk_group_f

Survival Risk Group Prediction Function

Description

This function builds a Random Forest (RF) model to classify samples into high-risk or low-risk survival groups based on selected features.

Usage

```
predict_survival_risk_group_f(
  selected_train_data,
  selected_test_data,
  Feature_List,
  K = 5
)
```

Arguments

selected_train_data	A data frame containing normalized expression data of selected features and survival information for training set.
selected_test_data	A data frame containing normalized expression data of selected features and survival information for test set.
Feature_List	A list of features to be used for predicting the risk class in the model.
K	Numeric value specifying the number of folds for K-fold cross-validation (default = 5).

Value

A list containing the following components:

best_model	The Best RF model.
Train_results	Prediction resultst on Training data
Test_results	Prediction resultst on Test data
misclassification_results	Prediction results of best on model on training and Test data
All_tree_matrix	Prediction results on training and test data based on all models using different number of trees

Examples

```
# Example usage of the predict_survival_risk_group_f function
data(Train_PI_data, package = "CPSM")
data(Test_PI_data, package = "CPSM")
data(Key_PI_list , package = "CPSM")
Results_Risk_group_Prediction<- predict_survival_risk_group_f(selected_train_data = Train_PI_data,
selected_test_data = Test_PI_data, Feature_List = Key_PI_list, K = 5 )
```

surv_curve_plots_f *Generate Survival Curve Plots*

Description

This function creates survival curve plots for all patients and highlights a specific patient based on the selected sample.

Arguments

<code>Surv_curve_data</code>	A data frame containing survival curve data. The data frame must include a column named <code>time_point</code> representing time and other columns corresponding to patient survival probabilities.
<code>selected_sample</code>	A character string specifying the patient ID to be highlighted in the plot.
<code>font_size</code>	Numeric. Font size for axis labels, titles, and legends. Must be supplied by the user.
<code>line_size</code>	Numeric. Line thickness for plotted curves. Must be supplied by the user.
<code>all_line_col</code>	Character. Color used for all non-highlighted patients (e.g., "black"). Must be supplied by the user.
<code>highlight_col</code>	Character. Color used to highlight the selected patient (e.g., "red"). Must be supplied by the user.

Details

- The input data (`Surv_curve_data`) must be structured such that the first column (`time_point`) represents time points, and each subsequent column represents the survival probabilities for a specific patient.
- If the `selected_sample` is not present in the column names of `Surv_curve_data`, a message will indicate that the sample is missing.
- The function uses the `ggplot2` package for generating survival curve plots.

Value

A list containing two `ggplot2` objects:

<code>all_patients_plot</code>	A <code>ggplot</code> object displaying survival curves for all patients.
<code>highlighted_patient_plot</code>	A <code>ggplot</code> object displaying survival curves for all patients with the selected patient highlighted.

Examples

```
# Example survival curve data
Surv_curve_data <- data.frame(
  time_point = c(0, 1, 2, 3, 4),
  Patient1 = c(1, 0.9, 0.8, 0.7, 0.6),
  Patient2 = c(1, 0.85, 0.75, 0.65, 0.55)
)

# Generate plots with Patient1 highlighted
plots <- surv_curve_plots_f(
  Surv_curve_data,
  selected_sample = "Patient1",
  font_size = 12,
```

```
    line_size = 0.5,
    all_line_col = "black",
    highlight_col = "red"
  )

# View the plots
print(plots$all_patients_plot)
print(plots$highlighted_patient_plot)
```

survCurves_data

survCurves data

Description

This is survCurves data.

Usage

```
data("survCurves_data")
```

Format

A data frame with 15 observations on the following 19 variables.

time_point a numeric vector
'TCGA-E1-A7Z6-01' a numeric vector
'TCGA-S9-A7IX-01' a numeric vector
'TCGA-HT-8010-01' a numeric vector
'TCGA-VM-A8C8-01' a numeric vector
'TCGA-DU-5847-01' a numeric vector
'TCGA-TQ-A7RQ-01' a numeric vector
'TCGA-HT-7606-01' a numeric vector
'TCGA-S9-A7QY-01' a numeric vector
'TCGA-DH-5142-01' a numeric vector
'TCGA-DU-6408-01' a numeric vector
'TCGA-FG-8191-01' a numeric vector
'TCGA-TM-A84S-01' a numeric vector
'TCGA-DB-A64S-01' a numeric vector
'TCGA-DU-6542-01' a numeric vector
'TCGA-DU-A7T6-01' a numeric vector
'TCGA-DB-A4XF-01' a numeric vector
'TCGA-S9-A6WN-01' a numeric vector
'TCGA-P5-A5EX-01' a numeric vector

Details

This is survCurves data.

Value

This is a data frame.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(survCurves_data)
## maybe str(survCurves_data)
```

Test_Clin	<i>Test Clin</i>
-----------	------------------

Description

This is Test Clin.

Usage

```
data("Test_Clin")
```

Format

A data frame with 18 observations on the following 20 variables.

Age a numeric vector
 subtype a character vector
 gender a character vector
 race a character vector
 ajcc_pathologic_tumor_stage a logical vector
 histological_type a character vector
 histological_grade a character vector
 treatment_outcome_first_course a character vector
 radiation_treatment_adjuvant a character vector
 sample_type a character vector
 type a character vector
 OS a numeric vector
 OS.time a numeric vector

DSS a numeric vector
DSS.time a numeric vector
DFI a numeric vector
DFI.time a numeric vector
PFI a numeric vector
PFI.time a numeric vector
OS_month a numeric vector

Details

This is Test Clin.

Value

A data frame with columns X and Y.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(Test_Clin)
## maybe str(Test_Clin)
## plot(Test_Clin)
```

test_FPKM

test FPKM

Description

This is test FPKM.

Usage

```
data("test_FPKM")
```

Format

A data frame with 18 observations on the following 2025 variables.

Age a numeric vector
subtype a character vector
gender a character vector
race a character vector
ajcc_pathologic_tumor_stage a logical vector

histological_type a character vector
histological_grade a character vector
treatment_outcome_first_course a character vector
radiation_treatment_adjuvant a character vector
sample_type a character vector
type a character vector
OS a numeric vector
OS.time a numeric vector
DSS a numeric vector
DSS.time a numeric vector
DFI a numeric vector
DFI.time a numeric vector
PFI a numeric vector
PFI.time a numeric vector
OS_month a numeric vector
A1BG a numeric vector
A1CF a numeric vector
A2M a numeric vector
A2ML1 a numeric vector
A3GALT2 a numeric vector
A4GALT a numeric vector
A4GNT a numeric vector
AAAS a numeric vector
AACS a numeric vector
AADAC a numeric vector
AADACL2 a numeric vector
AADACL3 a numeric vector
AADACL4 a numeric vector
AADAT a numeric vector
AAGAB a numeric vector
AAK1 a numeric vector
AAMDC a numeric vector
AAMP a numeric vector
AANAT a numeric vector
AAR2 a numeric vector
AARD a numeric vector
AARS1 a numeric vector

AARS2 a numeric vector
AARSD1 a numeric vector
AASDH a numeric vector
AASDHPPT a numeric vector
AASS a numeric vector
AATF a numeric vector
AATK a numeric vector
ABAT a numeric vector
ABCA1 a numeric vector
ABCA10 a numeric vector
ABCA12 a numeric vector
ABCA13 a numeric vector
ABCA2 a numeric vector
ABCA3 a numeric vector
ABCA4 a numeric vector
ABCA5 a numeric vector
ABCA6 a numeric vector
ABCA7 a numeric vector
ABCA8 a numeric vector
ABCA9 a numeric vector
ABCB1 a numeric vector
ABCB10 a numeric vector
ABCB11 a numeric vector
ABCB4 a numeric vector
ABCB5 a numeric vector
ABCB6 a numeric vector
ABCB7 a numeric vector
ABCB8 a numeric vector
ABCB9 a numeric vector
ABCC1 a numeric vector
ABCC10 a numeric vector
ABCC11 a numeric vector
ABCC12 a numeric vector
ABCC2 a numeric vector
ABCC3 a numeric vector
ABCC4 a numeric vector
ABCC5 a numeric vector

ABCC6 a numeric vector
ABCC8 a numeric vector
ABCC9 a numeric vector
ABCD1 a numeric vector
ABCD2 a numeric vector
ABCD3 a numeric vector
ABCD4 a numeric vector
ABCE1 a numeric vector
ABCF1 a numeric vector
ABCF2 a numeric vector
ABCF2.H2BE1 a numeric vector
ABCF3 a numeric vector
ABCG1 a numeric vector
ABCG2 a numeric vector
ABCG4 a numeric vector
ABCG5 a numeric vector
ABCG8 a numeric vector
ABHD1 a numeric vector
ABHD10 a numeric vector
ABHD11 a numeric vector
ABHD12 a numeric vector
ABHD12B a numeric vector
ABHD13 a numeric vector
ABHD14A a numeric vector
ABHD14A.ACY1 a numeric vector
ABHD14B a numeric vector
ABHD15 a numeric vector
ABHD16A a numeric vector
ABHD16B a numeric vector
ABHD17A a numeric vector
ABHD17B a numeric vector
ABHD17C a numeric vector
ABHD18 a numeric vector
ABHD2 a numeric vector
ABHD3 a numeric vector
ABHD4 a numeric vector
ABHD5 a numeric vector

ABHD6 a numeric vector
ABHD8 a numeric vector
ABI1 a numeric vector
ABI2 a numeric vector
ABI3 a numeric vector
ABI3BP a numeric vector
ABITRAM a numeric vector
ABL1 a numeric vector
ABL2 a numeric vector
ABLIM1 a numeric vector
ABLIM2 a numeric vector
ABLIM3 a numeric vector
ABO a numeric vector
ABR a numeric vector
ABRA a numeric vector
ABRACL a numeric vector
ABRAXAS1 a numeric vector
ABRAXAS2 a numeric vector
ABT1 a numeric vector
ABTB1 a numeric vector
ABTB2 a numeric vector
AC000093.1 a numeric vector
AC000120.2 a numeric vector
AC000120.3 a numeric vector
AC001226.2 a numeric vector
AC002094.3 a numeric vector
AC002310.4 a numeric vector
AC002456.2 a numeric vector
AC002985.1 a numeric vector
AC002996.1 a numeric vector
AC003002.1 a numeric vector
AC003002.2 a numeric vector
AC003002.3 a numeric vector
AC003005.1 a numeric vector
AC003006.1 a numeric vector
AC003688.1 a numeric vector
AC004076.1 a numeric vector

AC004080.3 a numeric vector
AC004223.3 a numeric vector
AC004233.4 a numeric vector
AC004593.2 a numeric vector
AC004687.2 a numeric vector
AC004691.2 a numeric vector
AC004706.3 a numeric vector
AC004805.1 a numeric vector
AC004832.3 a numeric vector
AC004922.1 a numeric vector
AC004997.1 a numeric vector
AC005020.2 a numeric vector
AC005041.1 a numeric vector
AC005154.5 a numeric vector
AC005192.1 a numeric vector
AC005258.1 a numeric vector
AC005324.2 a numeric vector
AC005324.3 a numeric vector
AC005520.1 a numeric vector
AC005551.1 a numeric vector
AC005670.2 a numeric vector
AC005697.1 a numeric vector
AC005702.1 a numeric vector
AC005726.1 a numeric vector
AC005832.4 a numeric vector
AC005833.1 a numeric vector
AC005837.2 a numeric vector
AC005943.1 a numeric vector
AC006030.1 a numeric vector
AC006059.2 a numeric vector
AC006064.6 a numeric vector
AC006254.1 a numeric vector
AC006486.1 a numeric vector
AC006486.3 a numeric vector
AC006538.2 a numeric vector
AC006978.2 a numeric vector
AC007040.2 a numeric vector

AC007192.1 a numeric vector
AC007326.4 a numeric vector
AC007375.2 a numeric vector
AC007731.4 a numeric vector
AC007846.2 a numeric vector
AC007906.2 a numeric vector
AC007998.2 a numeric vector
AC008012.1 a numeric vector
AC008073.3 a numeric vector
AC008162.2 a numeric vector
AC008397.1 a numeric vector
AC008397.2 a numeric vector
AC008403.1 a numeric vector
AC008481.3 a numeric vector
AC008537.1 a numeric vector
AC008575.1 a numeric vector
AC008581.2 a numeric vector
AC008676.3 a numeric vector
AC008687.1 a numeric vector
AC008687.4 a numeric vector
AC008687.8 a numeric vector
AC008695.1 a numeric vector
AC008750.7 a numeric vector
AC008758.1 a numeric vector
AC008758.5 a numeric vector
AC008758.6 a numeric vector
AC008763.2 a numeric vector
AC008763.3 a numeric vector
AC008763.4 a numeric vector
AC008764.1 a numeric vector
AC008764.4 a numeric vector
AC008770.1 a numeric vector
AC008770.2 a numeric vector
AC008770.4 a numeric vector
AC008878.1 a numeric vector
AC008878.2 a numeric vector
AC008878.3 a numeric vector

AC008982.1 a numeric vector
AC009070.1 a numeric vector
AC009133.6 a numeric vector
AC009163.3 a numeric vector
AC009163.5 a numeric vector
AC009412.1 a numeric vector
AC009690.1 a numeric vector
AC009690.3 a numeric vector
AC009779.3 a numeric vector
AC009879.2 a numeric vector
AC009879.3 a numeric vector
AC010132.3 a numeric vector
AC010197.2 a numeric vector
AC010255.2 a numeric vector
AC010319.2 a numeric vector
AC010323.1 a numeric vector
AC010325.1 a numeric vector
AC010326.2 a numeric vector
AC010327.2 a numeric vector
AC010422.3 a numeric vector
AC010422.5 a numeric vector
AC010422.6 a numeric vector
AC010422.8 a numeric vector
AC010463.1 a numeric vector
AC010522.1 a numeric vector
AC010531.1 a numeric vector
AC010542.3 a numeric vector
AC010547.4 a numeric vector
AC010615.4 a numeric vector
AC010616.1 a numeric vector
AC010619.1 a numeric vector
AC010646.1 a numeric vector
AC010973.3 a numeric vector
AC010980.1 a numeric vector
AC011005.1 a numeric vector
AC011330.3 a numeric vector
AC011448.1 a numeric vector

AC011452.1 a numeric vector
AC011455.2 a numeric vector
AC011462.1 a numeric vector
AC011473.4 a numeric vector
AC011479.1 a numeric vector
AC011498.4 a numeric vector
AC011499.1 a numeric vector
AC011511.1 a numeric vector
AC011511.4 a numeric vector
AC011530.1 a numeric vector
AC012184.2 a numeric vector
AC012213.5 a numeric vector
AC012254.2 a numeric vector
AC012309.1 a numeric vector
AC012488.2 a numeric vector
AC012531.3 a numeric vector
AC012651.1 a numeric vector
AC013271.1 a numeric vector
AC013394.1 a numeric vector
AC013470.2 a numeric vector
AC013477.1 a numeric vector
AC013489.1 a numeric vector
AC013717.1 a numeric vector
AC015688.4 a numeric vector
AC015802.6 a numeric vector
AC015813.2 a numeric vector
AC017083.3 a numeric vector
AC018362.3 a numeric vector
AC018512.1 a numeric vector
AC018523.2 a numeric vector
AC018630.4 a numeric vector
AC018709.1 a numeric vector
AC018755.2 a numeric vector
AC018809.3 a numeric vector
AC019117.3 a numeric vector
AC019257.8 a numeric vector
AC020636.2 a numeric vector

AC020765.6 a numeric vector
AC020907.6 a numeric vector
AC020909.1 a numeric vector
AC020915.4 a numeric vector
AC020922.1 a numeric vector
AC021072.1 a numeric vector
AC021087.5 a numeric vector
AC021660.3 a numeric vector
AC022335.1 a numeric vector
AC022384.1 a numeric vector
AC022400.5 a numeric vector
AC022414.1 a numeric vector
AC022415.2 a numeric vector
AC022506.1 a numeric vector
AC022826.2 a numeric vector
AC023055.1 a numeric vector
AC024592.3 a numeric vector
AC024598.1 a numeric vector
AC025165.3 a numeric vector
AC025165.6 a numeric vector
AC025263.2 a numeric vector
AC025283.2 a numeric vector
AC025287.4 a numeric vector
AC026316.4 a numeric vector
AC026464.1 a numeric vector
AC026464.3 a numeric vector
AC026464.4 a numeric vector
AC026464.6 a numeric vector
AC026786.1 a numeric vector
AC026954.2 a numeric vector
AC027644.4 a numeric vector
AC027796.3 a numeric vector
AC034102.2 a numeric vector
AC034228.3 a numeric vector
AC036214.3 a numeric vector
AC037459.1 a numeric vector
AC040162.1 a numeric vector

AC046185.1 a numeric vector
AC048338.1 a numeric vector
AC048338.2 a numeric vector
AC053503.6 a numeric vector
AC055811.2 a numeric vector
AC055839.2 a numeric vector
AC058822.1 a numeric vector
AC063943.2 a numeric vector
AC067968.1 a numeric vector
AC068234.1 a numeric vector
AC068533.4 a numeric vector
AC068547.1 a numeric vector
AC068580.4 a numeric vector
AC068631.2 a numeric vector
AC068775.1 a numeric vector
AC068831.6 a numeric vector
AC068870.4 a numeric vector
AC068896.1 a numeric vector
AC068946.1 a numeric vector
AC068946.2 a numeric vector
AC069257.3 a numeric vector
AC069288.1 a numeric vector
AC069368.1 a numeric vector
AC069444.2 a numeric vector
AC069503.2 a numeric vector
AC069544.2 a numeric vector
AC072022.2 a numeric vector
AC073082.1 a numeric vector
AC073111.3 a numeric vector
AC073283.3 a numeric vector
AC073508.2 a numeric vector
AC073585.1 a numeric vector
AC073610.2 a numeric vector
AC073612.1 a numeric vector
AC073896.1 a numeric vector
AC074143.1 a numeric vector
AC078815.1 a numeric vector

AC078927.1 a numeric vector
AC079447.1 a numeric vector
AC079594.1 a numeric vector
AC079741.2 a numeric vector
AC083800.1 a numeric vector
AC083977.1 a numeric vector
AC084337.2 a numeric vector
AC084756.2 a numeric vector
AC087289.3 a numeric vector
AC087632.2 a numeric vector
AC087721.2 a numeric vector
AC090004.1 a numeric vector
AC090227.2 a numeric vector
AC090360.1 a numeric vector
AC090517.4 a numeric vector
AC090527.2 a numeric vector
AC091057.5 a numeric vector
AC091167.2 a numeric vector
AC091167.6 a numeric vector
AC091167.7 a numeric vector
AC091551.1 a numeric vector
AC091959.1 a numeric vector
AC092017.2 a numeric vector
AC092042.3 a numeric vector
AC092073.1 a numeric vector
AC092111.3 a numeric vector
AC092143.1 a numeric vector
AC092329.3 a numeric vector
AC092442.1 a numeric vector
AC092587.1 a numeric vector
AC092647.5 a numeric vector
AC092718.3 a numeric vector
AC092718.8 a numeric vector
AC092835.1 a numeric vector
AC093155.3 a numeric vector
AC093227.2 a numeric vector
AC093246.1 a numeric vector

AC093323.1 a numeric vector
AC093423.3 a numeric vector
AC093512.2 a numeric vector
AC093525.1 a numeric vector
AC093525.2 a numeric vector
AC093668.1 a numeric vector
AC093827.5 a numeric vector
AC093884.1 a numeric vector
AC093899.2 a numeric vector
AC096887.1 a numeric vector
AC097104.1 a numeric vector
AC097625.1 a numeric vector
AC097634.4 a numeric vector
AC097636.1 a numeric vector
AC097637.1 a numeric vector
AC098484.3 a numeric vector
AC098582.1 a numeric vector
AC098588.2 a numeric vector
AC098650.1 a numeric vector
AC098850.3 a numeric vector
AC099489.1 a numeric vector
AC099569.1 a numeric vector
AC099811.2 a numeric vector
AC099850.2 a numeric vector
AC100868.1 a numeric vector
AC104109.3 a numeric vector
AC104304.2 a numeric vector
AC104389.5 a numeric vector
AC104389.6 a numeric vector
AC104452.1 a numeric vector
AC104472.3 a numeric vector
AC104532.1 a numeric vector
AC104581.2 a numeric vector
AC105001.2 a numeric vector
AC105052.1 a numeric vector
AC105052.3 a numeric vector
AC106741.1 a numeric vector

AC106873.8 a numeric vector
AC106886.5 a numeric vector
AC107871.1 a numeric vector
AC107959.5 a numeric vector
AC108488.2 a numeric vector
AC108941.3 a numeric vector
AC109583.1 a numeric vector
AC110275.1 a numeric vector
AC112128.1 a numeric vector
AC112229.3 a numeric vector
AC112504.2 a numeric vector
AC113189.12 a numeric vector
AC113348.1 a numeric vector
AC113348.2 a numeric vector
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AP1S1 a numeric vector
AP1S2 a numeric vector
AP1S3 a numeric vector
AP2A1 a numeric vector
AP2A2 a numeric vector
AP2B1 a numeric vector
AP2M1 a numeric vector
AP2S1 a numeric vector
AP3B1 a numeric vector
AP3B2 a numeric vector
AP3D1 a numeric vector
AP3M1 a numeric vector
AP3M2 a numeric vector
AP3S1 a numeric vector
AP3S2 a numeric vector
AP4B1 a numeric vector
AP4E1 a numeric vector
AP4M1 a numeric vector
AP4S1 a numeric vector
AP5B1 a numeric vector
AP5M1 a numeric vector
AP5S1 a numeric vector
AP5Z1 a numeric vector
APAF1 a numeric vector
APBA1 a numeric vector
APBA2 a numeric vector
APBA3 a numeric vector

APBB1 a numeric vector
APBB1IP a numeric vector
APBB2 a numeric vector
APBB3 a numeric vector
APC a numeric vector
APC2 a numeric vector
APCDD1 a numeric vector
APCDD1L a numeric vector
APCS a numeric vector
APEH a numeric vector
APELA a numeric vector
APEX1 a numeric vector
APEX2 a numeric vector
APH1A a numeric vector
APH1B a numeric vector
API5 a numeric vector
APIP a numeric vector
APLF a numeric vector
APLN a numeric vector
APLNR a numeric vector
APLP1 a numeric vector
APLP2 a numeric vector
APMAP a numeric vector
APOA1 a numeric vector
APOA2 a numeric vector
APOA4 a numeric vector
APOA5 a numeric vector
APOB a numeric vector
APOBEC1 a numeric vector
APOBEC2 a numeric vector
APOBEC3A a numeric vector
APOBEC3B a numeric vector
APOBEC3C a numeric vector
APOBEC3D a numeric vector
APOBEC3F a numeric vector
APOBEC3G a numeric vector
APOBEC3H a numeric vector

APOBEC4 a numeric vector
APOBR a numeric vector
APOC1 a numeric vector
APOC2 a numeric vector
APOC3 a numeric vector
APOC4 a numeric vector
APOC4.APOC2 a numeric vector
APOD a numeric vector
APOE a numeric vector
APOF a numeric vector
APOH a numeric vector
APOL1 a numeric vector
APOL2 a numeric vector
APOL3 a numeric vector
APOL4 a numeric vector
APOL5 a numeric vector
APOL6 a numeric vector
APOLD1 a numeric vector
APOM a numeric vector
APOO a numeric vector
APOOL a numeric vector
APP a numeric vector
APPBP2 a numeric vector
APPL1 a numeric vector
APPL2 a numeric vector
APRT a numeric vector
APTX a numeric vector
AQP1 a numeric vector
AQP10 a numeric vector
AQP11 a numeric vector
AQP12A a numeric vector
AQP12B a numeric vector
AQP2 a numeric vector
AQP3 a numeric vector
AQP4 a numeric vector
AQP5 a numeric vector
AQP6 a numeric vector

AQP7 a numeric vector
AQP8 a numeric vector
AQP9 a numeric vector
AQR a numeric vector
AR a numeric vector
ARAF a numeric vector
ARAP1 a numeric vector
ARAP2 a numeric vector
ARAP3 a numeric vector
ARC a numeric vector
ARCN1 a numeric vector
AREG a numeric vector
AREL1 a numeric vector
ARF1 a numeric vector
ARF3 a numeric vector
ARF4 a numeric vector
ARF5 a numeric vector
ARF6 a numeric vector
ARFGAP1 a numeric vector
ARFGAP2 a numeric vector
ARFGAP3 a numeric vector
ARFGEF1 a numeric vector
ARFGEF2 a numeric vector
ARFGEF3 a numeric vector
ARFIP1 a numeric vector
ARFIP2 a numeric vector
ARFRP1 a numeric vector
ARG1 a numeric vector
ARG2 a numeric vector
ARGFX a numeric vector
ARGLU1 a numeric vector
ARHGAP1 a numeric vector
ARHGAP10 a numeric vector
ARHGAP11A a numeric vector
ARHGAP11B a numeric vector
ARHGAP12 a numeric vector
ARHGAP15 a numeric vector

ARHGAP17 a numeric vector
ARHGAP18 a numeric vector
ARHGAP19 a numeric vector
ARHGAP19.SLIT1 a numeric vector
ARHGAP20 a numeric vector
ARHGAP21 a numeric vector
ARHGAP22 a numeric vector
ARHGAP23 a numeric vector
ARHGAP24 a numeric vector
ARHGAP25 a numeric vector
ARHGAP26 a numeric vector
ARHGAP27 a numeric vector
ARHGAP28 a numeric vector
ARHGAP29 a numeric vector
ARHGAP30 a numeric vector
ARHGAP31 a numeric vector
ARHGAP32 a numeric vector
ARHGAP33 a numeric vector
ARHGAP35 a numeric vector
ARHGAP36 a numeric vector
ARHGAP39 a numeric vector
ARHGAP4 a numeric vector
ARHGAP40 a numeric vector
ARHGAP42 a numeric vector
ARHGAP44 a numeric vector
ARHGAP45 a numeric vector
ARHGAP5 a numeric vector
ARHGAP6 a numeric vector
ARHGAP8 a numeric vector
ARHGAP9 a numeric vector
ARHGDIA a numeric vector
ARHGDIB a numeric vector
ARHGDIG a numeric vector
ARHGEF1 a numeric vector
ARHGEF10 a numeric vector
ARHGEF10L a numeric vector
ARHGEF11 a numeric vector

ARHGEF12 a numeric vector
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ARHGEF18 a numeric vector
ARHGEF19 a numeric vector
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ARHGEF28 a numeric vector
ARHGEF3 a numeric vector
ARHGEF33 a numeric vector
ARHGEF35 a numeric vector
ARHGEF37 a numeric vector
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ARHGEF4 a numeric vector
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ARHGEF7 a numeric vector
ARHGEF9 a numeric vector
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ARID3B a numeric vector
ARID3BP1 a numeric vector
ARID3C a numeric vector
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ARID4B a numeric vector
ARID5A a numeric vector
ARID5B a numeric vector
ARIH1 a numeric vector
ARIH2 a numeric vector
ARL1 a numeric vector
ARL10 a numeric vector

ARL11 a numeric vector
ARL13A a numeric vector
ARL13B a numeric vector
ARL14 a numeric vector
ARL14EP a numeric vector
ARL14EPL a numeric vector
ARL15 a numeric vector
ARL16 a numeric vector
ARL17A a numeric vector
ARL17B a numeric vector
ARL2 a numeric vector
ARL2.SNX15 a numeric vector
ARL2BP a numeric vector
ARL3 a numeric vector
ARL4A a numeric vector
ARL4C a numeric vector
ARL4D a numeric vector
ARL5A a numeric vector
ARL5B a numeric vector
ARL5C a numeric vector
ARL6 a numeric vector
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ARL6IP4 a numeric vector
ARL6IP5 a numeric vector
ARL6IP6 a numeric vector
ARL8A a numeric vector
ARL8B a numeric vector
ARL9 a numeric vector
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ARMC10 a numeric vector
ARMC12 a numeric vector
ARMC2 a numeric vector
ARMC3 a numeric vector
ARMC4 a numeric vector
ARMC5 a numeric vector
ARMC6 a numeric vector
ARMC7 a numeric vector

ARMC8 a numeric vector
ARMC9 a numeric vector
ARMCX1 a numeric vector
ARMCX2 a numeric vector
ARMCX3 a numeric vector
ARMCX4 a numeric vector
ARMCX5 a numeric vector
ARMCX5.GPRASP2 a numeric vector
ARMCX6 a numeric vector
ARMH1 a numeric vector
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ARMH3 a numeric vector
ARMH4 a numeric vector
ARMS2 a numeric vector
ARMT1 a numeric vector
ARNT a numeric vector
ARNT2 a numeric vector
ARNTL a numeric vector
ARNTL2 a numeric vector
ARPC1A a numeric vector
ARPC1B a numeric vector
ARPC2 a numeric vector
ARPC3 a numeric vector
ARPC4 a numeric vector
ARPC4.TTLL3 a numeric vector
ARPC5 a numeric vector
ARPC5L a numeric vector
ARPIN a numeric vector
ARPIN.AP3S2 a numeric vector
ARPP19 a numeric vector
ARPP21 a numeric vector
ARR3 a numeric vector
ARRB1 a numeric vector
ARRB2 a numeric vector
ARRDC1 a numeric vector
ARRDC2 a numeric vector
ARRDC3 a numeric vector

ARRDC4 a numeric vector
ARRDC5 a numeric vector
ARSA a numeric vector
ARSB a numeric vector
ARSD a numeric vector
ARSF a numeric vector
ARSG a numeric vector
ARSH a numeric vector
ARSI a numeric vector
ARSJ a numeric vector
ARSK a numeric vector
ARSL a numeric vector
ART1 a numeric vector
ART3 a numeric vector
ART4 a numeric vector
ART5 a numeric vector
ARTN a numeric vector
ARV1 a numeric vector
ARVCF a numeric vector
ARX a numeric vector
AS3MT a numeric vector
ASAH1 a numeric vector
ASAH2 a numeric vector
ASAH2B a numeric vector
ASAP1 a numeric vector
ASAP2 a numeric vector
ASAP3 a numeric vector
ASB1 a numeric vector
ASB10 a numeric vector
ASB11 a numeric vector
ASB12 a numeric vector
ASB13 a numeric vector
ASB14 a numeric vector
ASB15 a numeric vector
ASB16 a numeric vector
ASB17 a numeric vector
ASB18 a numeric vector

ASB2 a numeric vector
ASB3 a numeric vector
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ASCL3 a numeric vector
ASCL4 a numeric vector
ASCL5 a numeric vector
ASDURF a numeric vector
ASF1A a numeric vector
ASF1B a numeric vector
ASGR1 a numeric vector
ASGR2 a numeric vector
ASH1L a numeric vector
ASH2L a numeric vector
ASIC1 a numeric vector
ASIC2 a numeric vector
ASIC3 a numeric vector
ASIC4 a numeric vector
ASIC5 a numeric vector
ASIP a numeric vector
ASL a numeric vector
ASMT a numeric vector
ASMTL a numeric vector
ASNS a numeric vector
ASNSD1 a numeric vector
ASPA a numeric vector
ASPDH a numeric vector
ASPG a numeric vector

ASPH a numeric vector
ASPHD1 a numeric vector
ASPHD2 a numeric vector
ASPM a numeric vector
ASPN a numeric vector
ASPRV1 a numeric vector
ASPSR1 a numeric vector
ASRGL1 a numeric vector
ASS1 a numeric vector
ASTE1 a numeric vector
ASTL a numeric vector
ASTN1 a numeric vector
ASTN2 a numeric vector
ASXL1 a numeric vector
ASXL2 a numeric vector
ASXL3 a numeric vector
ASZ1 a numeric vector
ATAD1 a numeric vector
ATAD2 a numeric vector
ATAD2B a numeric vector
ATAD3A a numeric vector
ATAD3B a numeric vector
ATAD3C a numeric vector
ATAD5 a numeric vector
ATAT1 a numeric vector
ATCAY a numeric vector
ATE1 a numeric vector
ATF1 a numeric vector
ATF2 a numeric vector
ATF3 a numeric vector
ATF4 a numeric vector
ATF5 a numeric vector
ATF6 a numeric vector
ATF6B a numeric vector
ATF7 a numeric vector
ATF7.NPFF a numeric vector
ATF7IP a numeric vector

ATF7IP2 a numeric vector
ATG10 a numeric vector
ATG101 a numeric vector
ATG12 a numeric vector
ATG13 a numeric vector
ATG14 a numeric vector
ATG16L1 a numeric vector
ATG16L2 a numeric vector
ATG2A a numeric vector
ATG2B a numeric vector
ATG3 a numeric vector
ATG4A a numeric vector
ATG4B a numeric vector
ATG4C a numeric vector
ATG4D a numeric vector
ATG5 a numeric vector
ATG7 a numeric vector
ATG9A a numeric vector
ATG9B a numeric vector
ATIC a numeric vector
ATL1 a numeric vector
ATL2 a numeric vector
ATL3 a numeric vector
ATM a numeric vector
ATMIN a numeric vector
ATN1 a numeric vector
ATOH1 a numeric vector
ATOH7 a numeric vector
ATOH8 a numeric vector
ATOX1 a numeric vector
ATP10A a numeric vector
ATP10B a numeric vector
ATP10D a numeric vector
ATP11A a numeric vector
ATP11B a numeric vector
ATP11C a numeric vector
ATP12A a numeric vector

ATP13A1 a numeric vector
ATP13A2 a numeric vector
ATP13A3 a numeric vector
ATP13A4 a numeric vector
ATP13A5 a numeric vector
ATP1A1 a numeric vector
ATP1A2 a numeric vector
ATP1A3 a numeric vector
ATP1A4 a numeric vector
ATP1B1 a numeric vector
ATP1B2 a numeric vector
ATP1B3 a numeric vector
ATP1B4 a numeric vector
ATP23 a numeric vector
ATP2A1 a numeric vector
ATP2A2 a numeric vector
ATP2A3 a numeric vector
ATP2B1 a numeric vector
ATP2B2 a numeric vector
ATP2B3 a numeric vector
ATP2B4 a numeric vector
ATP2C1 a numeric vector
ATP2C2 a numeric vector
ATP4A a numeric vector
ATP4B a numeric vector
ATP5F1A a numeric vector
ATP5F1B a numeric vector
ATP5F1C a numeric vector
ATP5F1D a numeric vector
ATP5F1E a numeric vector
ATP5IF1 a numeric vector
ATP5MC1 a numeric vector
ATP5MC2 a numeric vector
ATP5MC3 a numeric vector
ATP5MD a numeric vector
ATP5ME a numeric vector
ATP5MF a numeric vector

ATP5MF.PTCD1 a numeric vector
ATP5MG a numeric vector
ATP5MGL a numeric vector
ATP5MPL a numeric vector
ATP5PB a numeric vector
ATP5PD a numeric vector
ATP5PF a numeric vector
ATP5PO a numeric vector
ATP6AP1 a numeric vector
ATP6AP1L a numeric vector
ATP6AP2 a numeric vector
ATP6V0A1 a numeric vector
ATP6V0A2 a numeric vector
ATP6V0A4 a numeric vector
ATP6V0B a numeric vector
ATP6V0C a numeric vector
ATP6V0D1 a numeric vector
ATP6V0D2 a numeric vector
ATP6V0E1 a numeric vector
ATP6V0E2 a numeric vector
ATP6V1A a numeric vector
ATP6V1B1 a numeric vector
ATP6V1B2 a numeric vector
ATP6V1C1 a numeric vector
ATP6V1C2 a numeric vector
ATP6V1D a numeric vector
ATP6V1E1 a numeric vector
ATP6V1E2 a numeric vector
ATP6V1F a numeric vector
ATP6V1FNB a numeric vector
ATP6V1G1 a numeric vector
ATP6V1G2 a numeric vector
ATP6V1G2.DDX39B a numeric vector
ATP6V1G3 a numeric vector
ATP6V1H a numeric vector
ATP7A a numeric vector
ATP7B a numeric vector

ATP8A1 a numeric vector
ATP8A2 a numeric vector
ATP8B1 a numeric vector
ATP8B2 a numeric vector
ATP8B3 a numeric vector
ATP8B4 a numeric vector
ATP9A a numeric vector
ATP9B a numeric vector
ATPAF1 a numeric vector
ATPAF2 a numeric vector
ATPSCKMT a numeric vector
ATR a numeric vector
ATRAID a numeric vector
ATRIP a numeric vector
ATRN a numeric vector
ATRNL1 a numeric vector
ATRX a numeric vector
ATXN1 a numeric vector
ATXN10 a numeric vector
ATXN1L a numeric vector
ATXN2 a numeric vector
ATXN2L a numeric vector
ATXN3 a numeric vector
ATXN3L a numeric vector
ATXN7 a numeric vector
ATXN7L1 a numeric vector
ATXN7L2 a numeric vector
ATXN7L3 a numeric vector
ATXN7L3B a numeric vector
AUH a numeric vector
AUNIP a numeric vector
AUP1 a numeric vector
AURKA a numeric vector
AURKAIP1 a numeric vector
AURKB a numeric vector
AURKC a numeric vector
AUTS2 a numeric vector

AVEN a numeric vector
AVIL a numeric vector
AVL9 a numeric vector
AVP a numeric vector
AVPI1 a numeric vector
AVPR1A a numeric vector
AVPR1B a numeric vector
AVPR2 a numeric vector
AWAT1 a numeric vector
AWAT2 a numeric vector
AXDND1 a numeric vector
AXIN1 a numeric vector
AXIN2 a numeric vector
AXL a numeric vector
AZGP1 a numeric vector
AZI2 a numeric vector
AZIN1 a numeric vector
AZIN2 a numeric vector
AZU1 a numeric vector
B2M a numeric vector
B3GALNT1 a numeric vector
B3GALNT2 a numeric vector
B3GALT1 a numeric vector
B3GALT2 a numeric vector
B3GALT4 a numeric vector
B3GALT5 a numeric vector
B3GALT6 a numeric vector
B3GAT1 a numeric vector
B3GAT2 a numeric vector
B3GAT3 a numeric vector
B3GLCT a numeric vector
B3GNT10 a numeric vector
B3GNT2 a numeric vector
B3GNT3 a numeric vector
B3GNT4 a numeric vector
B3GNT5 a numeric vector
B3GNT6 a numeric vector

B3GNT7 a numeric vector
B3GNT8 a numeric vector
B3GNT9 a numeric vector
B3GNTL1 a numeric vector
B4GALNT1 a numeric vector
B4GALNT2 a numeric vector
B4GALNT3 a numeric vector
B4GALNT4 a numeric vector
B4GALT1 a numeric vector
B4GALT2 a numeric vector
B4GALT3 a numeric vector
B4GALT4 a numeric vector
B4GALT5 a numeric vector
B4GALT6 a numeric vector
B4GALT7 a numeric vector
B4GAT1 a numeric vector
B9D1 a numeric vector
B9D2 a numeric vector
BAALC a numeric vector
BAAT a numeric vector
BABAM1 a numeric vector
BABAM2 a numeric vector
BACE1 a numeric vector
BACE2 a numeric vector
BACH1 a numeric vector
BACH2 a numeric vector
BAD a numeric vector
BAG1 a numeric vector
BAG2 a numeric vector
BAG3 a numeric vector
BAG4 a numeric vector
BAG5 a numeric vector
BAG6 a numeric vector
BAHCC1 a numeric vector
BAHD1 a numeric vector
BAIAP2 a numeric vector
BAIAP2L1 a numeric vector

BAIAP2L2 a numeric vector
BAIAP3 a numeric vector
BAK1 a numeric vector
BAMBI a numeric vector
BANF1 a numeric vector
BANF2 a numeric vector
BANK1 a numeric vector
BANP a numeric vector
BAP1 a numeric vector
BARD1 a numeric vector
BARHL1 a numeric vector
BARHL2 a numeric vector
BARX1 a numeric vector
BARX2 a numeric vector
BASP1 a numeric vector
BATF a numeric vector
BATF2 a numeric vector
BATF3 a numeric vector
BAX a numeric vector
BAZ1A a numeric vector
BAZ1B a numeric vector
BAZ2A a numeric vector

Details

This is test FPKM.

Value

Returns a dataframe.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(test_FPKM)
## maybe str(test_FPKM)
## plot(test_FPKM)
```

Test_Norm_data	<i>Test Norm data</i>
----------------	-----------------------

Description

This is Test Norm data.

Usage

```
data("Test_Norm_data")
```

Format

A data frame with 18 observations on the following 2025 variables.

Age a numeric vector
 subtype a character vector
 gender a character vector
 race a character vector
 ajcc_pathologic_tumor_stage a logical vector
 histological_type a character vector
 histological_grade a character vector
 treatment_outcome_first_course a character vector
 radiation_treatment_adjuvant a character vector
 sample_type a character vector
 type a character vector
 OS a numeric vector
 OS.time a numeric vector
 DSS a numeric vector
 DSS.time a numeric vector
 DFI a numeric vector
 DFI.time a numeric vector
 PFI a numeric vector
 PFI.time a numeric vector
 OS_month a numeric vector
 A1BG a numeric vector
 A1CF a numeric vector
 A2M a numeric vector
 A2ML1 a numeric vector
 A3GALT2 a numeric vector

A4GALT a numeric vector
A4GNT a numeric vector
AAAS a numeric vector
AACS a numeric vector
AADAC a numeric vector
AADACL2 a numeric vector
AADACL3 a numeric vector
AADACL4 a numeric vector
AADAT a numeric vector
AAGAB a numeric vector
AAK1 a numeric vector
AAMDC a numeric vector
AAMP a numeric vector
AANAT a numeric vector
AAR2 a numeric vector
AARD a numeric vector
AARS1 a numeric vector
AARS2 a numeric vector
AARSD1 a numeric vector
AASDH a numeric vector
AASDHPPT a numeric vector
AASS a numeric vector
AATF a numeric vector
AATK a numeric vector
ABAT a numeric vector
ABCA1 a numeric vector
ABCA10 a numeric vector
ABCA12 a numeric vector
ABCA13 a numeric vector
ABCA2 a numeric vector
ABCA3 a numeric vector
ABCA4 a numeric vector
ABCA5 a numeric vector
ABCA6 a numeric vector
ABCA7 a numeric vector
ABCA8 a numeric vector
ABCA9 a numeric vector

ABCB1 a numeric vector
ABCB10 a numeric vector
ABCB11 a numeric vector
ABCB4 a numeric vector
ABCB5 a numeric vector
ABCB6 a numeric vector
ABCB7 a numeric vector
ABCB8 a numeric vector
ABCB9 a numeric vector
ABCC1 a numeric vector
ABCC10 a numeric vector
ABCC11 a numeric vector
ABCC12 a numeric vector
ABCC2 a numeric vector
ABCC3 a numeric vector
ABCC4 a numeric vector
ABCC5 a numeric vector
ABCC6 a numeric vector
ABCC8 a numeric vector
ABCC9 a numeric vector
ABCD1 a numeric vector
ABCD2 a numeric vector
ABCD3 a numeric vector
ABCD4 a numeric vector
ABCE1 a numeric vector
ABCF1 a numeric vector
ABCF2 a numeric vector
ABCF2.H2BE1 a numeric vector
ABCF3 a numeric vector
ABCG1 a numeric vector
ABCG2 a numeric vector
ABCG4 a numeric vector
ABCG5 a numeric vector
ABCG8 a numeric vector
ABHD1 a numeric vector
ABHD10 a numeric vector
ABHD11 a numeric vector

ABHD12 a numeric vector
ABHD12B a numeric vector
ABHD13 a numeric vector
ABHD14A a numeric vector
ABHD14A.ACY1 a numeric vector
ABHD14B a numeric vector
ABHD15 a numeric vector
ABHD16A a numeric vector
ABHD16B a numeric vector
ABHD17A a numeric vector
ABHD17B a numeric vector
ABHD17C a numeric vector
ABHD18 a numeric vector
ABHD2 a numeric vector
ABHD3 a numeric vector
ABHD4 a numeric vector
ABHD5 a numeric vector
ABHD6 a numeric vector
ABHD8 a numeric vector
ABI1 a numeric vector
ABI2 a numeric vector
ABI3 a numeric vector
ABI3BP a numeric vector
ABITRAM a numeric vector
ABL1 a numeric vector
ABL2 a numeric vector
ABLIM1 a numeric vector
ABLIM2 a numeric vector
ABLIM3 a numeric vector
ABO a numeric vector
ABR a numeric vector
ABRA a numeric vector
ABRACL a numeric vector
ABRAXAS1 a numeric vector
ABRAXAS2 a numeric vector
ABT1 a numeric vector
ABTB1 a numeric vector

ABTB2 a numeric vector
AC000093.1 a numeric vector
AC000120.2 a numeric vector
AC000120.3 a numeric vector
AC001226.2 a numeric vector
AC002094.3 a numeric vector
AC002310.4 a numeric vector
AC002456.2 a numeric vector
AC002985.1 a numeric vector
AC002996.1 a numeric vector
AC003002.1 a numeric vector
AC003002.2 a numeric vector
AC003002.3 a numeric vector
AC003005.1 a numeric vector
AC003006.1 a numeric vector
AC003688.1 a numeric vector
AC004076.1 a numeric vector
AC004080.3 a numeric vector
AC004223.3 a numeric vector
AC004233.4 a numeric vector
AC004593.2 a numeric vector
AC004687.2 a numeric vector
AC004691.2 a numeric vector
AC004706.3 a numeric vector
AC004805.1 a numeric vector
AC004832.3 a numeric vector
AC004922.1 a numeric vector
AC004997.1 a numeric vector
AC005020.2 a numeric vector
AC005041.1 a numeric vector
AC005154.5 a numeric vector
AC005192.1 a numeric vector
AC005258.1 a numeric vector
AC005324.2 a numeric vector
AC005324.3 a numeric vector
AC005520.1 a numeric vector
AC005551.1 a numeric vector

AC005670.2 a numeric vector
AC005697.1 a numeric vector
AC005702.1 a numeric vector
AC005726.1 a numeric vector
AC005832.4 a numeric vector
AC005833.1 a numeric vector
AC005837.2 a numeric vector
AC005943.1 a numeric vector
AC006030.1 a numeric vector
AC006059.2 a numeric vector
AC006064.6 a numeric vector
AC006254.1 a numeric vector
AC006486.1 a numeric vector
AC006486.3 a numeric vector
AC006538.2 a numeric vector
AC006978.2 a numeric vector
AC007040.2 a numeric vector
AC007192.1 a numeric vector
AC007326.4 a numeric vector
AC007375.2 a numeric vector
AC007731.4 a numeric vector
AC007846.2 a numeric vector
AC007906.2 a numeric vector
AC007998.2 a numeric vector
AC008012.1 a numeric vector
AC008073.3 a numeric vector
AC008162.2 a numeric vector
AC008397.1 a numeric vector
AC008397.2 a numeric vector
AC008403.1 a numeric vector
AC008481.3 a numeric vector
AC008537.1 a numeric vector
AC008575.1 a numeric vector
AC008581.2 a numeric vector
AC008676.3 a numeric vector
AC008687.1 a numeric vector
AC008687.4 a numeric vector

AC008687.8 a numeric vector
AC008695.1 a numeric vector
AC008750.7 a numeric vector
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AC008758.5 a numeric vector
AC008758.6 a numeric vector
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AC008763.4 a numeric vector
AC008764.1 a numeric vector
AC008764.4 a numeric vector
AC008770.1 a numeric vector
AC008770.2 a numeric vector
AC008770.4 a numeric vector
AC008878.1 a numeric vector
AC008878.2 a numeric vector
AC008878.3 a numeric vector
AC008982.1 a numeric vector
AC009070.1 a numeric vector
AC009133.6 a numeric vector
AC009163.3 a numeric vector
AC009163.5 a numeric vector
AC009412.1 a numeric vector
AC009690.1 a numeric vector
AC009690.3 a numeric vector
AC009779.3 a numeric vector
AC009879.2 a numeric vector
AC009879.3 a numeric vector
AC010132.3 a numeric vector
AC010197.2 a numeric vector
AC010255.2 a numeric vector
AC010319.2 a numeric vector
AC010323.1 a numeric vector
AC010325.1 a numeric vector
AC010326.2 a numeric vector
AC010327.2 a numeric vector
AC010422.3 a numeric vector

AC010422.5 a numeric vector
AC010422.6 a numeric vector
AC010422.8 a numeric vector
AC010463.1 a numeric vector
AC010522.1 a numeric vector
AC010531.1 a numeric vector
AC010542.3 a numeric vector
AC010547.4 a numeric vector
AC010615.4 a numeric vector
AC010616.1 a numeric vector
AC010619.1 a numeric vector
AC010646.1 a numeric vector
AC010973.3 a numeric vector
AC010980.1 a numeric vector
AC011005.1 a numeric vector
AC011330.3 a numeric vector
AC011448.1 a numeric vector
AC011452.1 a numeric vector
AC011455.2 a numeric vector
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ALOX15B a numeric vector
ALOX5 a numeric vector
ALOX5AP a numeric vector
ALOXE3 a numeric vector
ALPG a numeric vector
ALPI a numeric vector
ALPK1 a numeric vector
ALPK2 a numeric vector
ALPK3 a numeric vector
ALPL a numeric vector
ALPP a numeric vector
ALS2 a numeric vector
ALS2CL a numeric vector
ALX1 a numeric vector
ALX3 a numeric vector
ALX4 a numeric vector
ALYREF a numeric vector
AMACR a numeric vector
AMBN a numeric vector
AMBP a numeric vector
AMBRA1 a numeric vector
AMD1 a numeric vector
AMDHD1 a numeric vector
AMDHD2 a numeric vector
AMELX a numeric vector
AMELY a numeric vector
AMER1 a numeric vector
AMER2 a numeric vector
AMER3 a numeric vector

AMFR a numeric vector
AMH a numeric vector
AMHR2 a numeric vector
AMIG01 a numeric vector
AMIG02 a numeric vector
AMIG03 a numeric vector
AMMECR1 a numeric vector
AMMECR1L a numeric vector
AMN a numeric vector
AMN1 a numeric vector
AMOT a numeric vector
AMOTL1 a numeric vector
AMOTL2 a numeric vector
AMPD1 a numeric vector
AMPD2 a numeric vector
AMPD3 a numeric vector
AMPH a numeric vector
AMT a numeric vector
AMTN a numeric vector
AMY1A a numeric vector
AMY1B a numeric vector
AMY1C a numeric vector
AMY2A a numeric vector
AMY2B a numeric vector
AMZ1 a numeric vector
AMZ2 a numeric vector
ANAPC1 a numeric vector
ANAPC10 a numeric vector
ANAPC11 a numeric vector
ANAPC13 a numeric vector
ANAPC15 a numeric vector
ANAPC16 a numeric vector
ANAPC2 a numeric vector
ANAPC4 a numeric vector
ANAPC5 a numeric vector
ANAPC7 a numeric vector
ANG a numeric vector

ANGEL1 a numeric vector
ANGEL2 a numeric vector
ANGPT1 a numeric vector
ANGPT2 a numeric vector
ANGPT4 a numeric vector
ANGPTL1 a numeric vector
ANGPTL2 a numeric vector
ANGPTL3 a numeric vector
ANGPTL4 a numeric vector
ANGPTL5 a numeric vector
ANGPTL6 a numeric vector
ANGPTL7 a numeric vector
ANGPTL8 a numeric vector
ANHx a numeric vector
ANK1 a numeric vector
ANK2 a numeric vector
ANK3 a numeric vector
ANKAR a numeric vector
ANKDD1A a numeric vector
ANKDD1B a numeric vector
ANKEF1 a numeric vector
ANKFN1 a numeric vector
ANKFY1 a numeric vector
ANKH a numeric vector
ANKHD1 a numeric vector
ANKHD1.EIF4EBP3 a numeric vector
ANKIB1 a numeric vector
ANKK1 a numeric vector
ANKLE1 a numeric vector
ANKLE2 a numeric vector
ANKMY1 a numeric vector
ANKMY2 a numeric vector
ANKRA2 a numeric vector
ANKRD1 a numeric vector
ANKRD10 a numeric vector
ANKRD11 a numeric vector
ANKRD12 a numeric vector

ANKRD13A a numeric vector
ANKRD13B a numeric vector
ANKRD13C a numeric vector
ANKRD13D a numeric vector
ANKRD16 a numeric vector
ANKRD17 a numeric vector
ANKRD18A a numeric vector
ANKRD18B a numeric vector
ANKRD2 a numeric vector
ANKRD20A1 a numeric vector
ANKRD20A2P a numeric vector
ANKRD20A3P a numeric vector
ANKRD20A4P a numeric vector
ANKRD22 a numeric vector
ANKRD23 a numeric vector
ANKRD24 a numeric vector
ANKRD26 a numeric vector
ANKRD27 a numeric vector
ANKRD28 a numeric vector
ANKRD29 a numeric vector
ANKRD30A a numeric vector
ANKRD30B a numeric vector
ANKRD30BL a numeric vector
ANKRD31 a numeric vector
ANKRD33 a numeric vector
ANKRD33B a numeric vector
ANKRD34A a numeric vector
ANKRD34B a numeric vector
ANKRD34C a numeric vector
ANKRD35 a numeric vector
ANKRD36 a numeric vector
ANKRD36B a numeric vector
ANKRD36C a numeric vector
ANKRD37 a numeric vector
ANKRD39 a numeric vector
ANKRD40 a numeric vector
ANKRD40CL a numeric vector

ANKRD42 a numeric vector
ANKRD44 a numeric vector
ANKRD45 a numeric vector
ANKRD46 a numeric vector
ANKRD49 a numeric vector
ANKRD50 a numeric vector
ANKRD52 a numeric vector
ANKRD53 a numeric vector
ANKRD54 a numeric vector
ANKRD55 a numeric vector
ANKRD6 a numeric vector
ANKRD60 a numeric vector
ANKRD61 a numeric vector
ANKRD62 a numeric vector
ANKRD63 a numeric vector
ANKRD65 a numeric vector
ANKRD66 a numeric vector
ANKRD7 a numeric vector
ANKRD9 a numeric vector
ANKS1A a numeric vector
ANKS1B a numeric vector
ANKS3 a numeric vector
ANKS4B a numeric vector
ANKS6 a numeric vector
ANKUB1 a numeric vector
ANKZF1 a numeric vector
ANLN a numeric vector
ANO1 a numeric vector
ANO10 a numeric vector
ANO2 a numeric vector
ANO3 a numeric vector
ANO4 a numeric vector
ANO5 a numeric vector
ANO6 a numeric vector
ANO7 a numeric vector
ANO8 a numeric vector
ANO9 a numeric vector

ANOS1 a numeric vector
ANP32A a numeric vector
ANP32B a numeric vector
ANP32D a numeric vector
ANP32E a numeric vector
ANPEP a numeric vector
ANTKMT a numeric vector
ANTXR1 a numeric vector
ANTXR2 a numeric vector
ANTXRL a numeric vector
ANXA1 a numeric vector
ANXA10 a numeric vector
ANXA11 a numeric vector
ANXA13 a numeric vector
ANXA2 a numeric vector
ANXA2R a numeric vector
ANXA3 a numeric vector
ANXA4 a numeric vector
ANXA5 a numeric vector
ANXA6 a numeric vector
ANXA7 a numeric vector
ANXA8 a numeric vector
ANXA8L1 a numeric vector
ANXA9 a numeric vector
AOAH a numeric vector
AOC1 a numeric vector
AOC2 a numeric vector
AOC3 a numeric vector
AOPEP a numeric vector
AOX1 a numeric vector
AP000295.1 a numeric vector
AP000311.1 a numeric vector
AP000350.4 a numeric vector
AP000356.5 a numeric vector
AP000471.1 a numeric vector
AP000721.1 a numeric vector
AP000781.2 a numeric vector

AP000812.3 a numeric vector
AP000812.4 a numeric vector
AP000944.5 a numeric vector
AP001054.1 a numeric vector
AP001267.5 a numeric vector
AP001273.2 a numeric vector
AP001453.3 a numeric vector
AP001458.2 a numeric vector
AP001781.2 a numeric vector
AP001931.1 a numeric vector
AP001931.2 a numeric vector
AP002373.1 a numeric vector
AP002495.1 a numeric vector
AP002512.3 a numeric vector
AP002748.5 a numeric vector
AP002884.2 a numeric vector
AP002990.1 a numeric vector
AP003071.5 a numeric vector
AP003108.2 a numeric vector
AP003419.1 a numeric vector
AP006621.6 a numeric vector
AP1AR a numeric vector
AP1B1 a numeric vector
AP1G1 a numeric vector
AP1G2 a numeric vector
AP1M1 a numeric vector
AP1M2 a numeric vector
AP1S1 a numeric vector
AP1S2 a numeric vector
AP1S3 a numeric vector
AP2A1 a numeric vector
AP2A2 a numeric vector
AP2B1 a numeric vector
AP2M1 a numeric vector
AP2S1 a numeric vector
AP3B1 a numeric vector
AP3B2 a numeric vector

AP3D1 a numeric vector
AP3M1 a numeric vector
AP3M2 a numeric vector
AP3S1 a numeric vector
AP3S2 a numeric vector
AP4B1 a numeric vector
AP4E1 a numeric vector
AP4M1 a numeric vector
AP4S1 a numeric vector
AP5B1 a numeric vector
AP5M1 a numeric vector
AP5S1 a numeric vector
AP5Z1 a numeric vector
APAF1 a numeric vector
APBA1 a numeric vector
APBA2 a numeric vector
APBA3 a numeric vector
APBB1 a numeric vector
APBB1IP a numeric vector
APBB2 a numeric vector
APBB3 a numeric vector
APC a numeric vector
APC2 a numeric vector
APCDD1 a numeric vector
APCDD1L a numeric vector
APCS a numeric vector
APEH a numeric vector
APELA a numeric vector
APEX1 a numeric vector
APEX2 a numeric vector
APH1A a numeric vector
APH1B a numeric vector
API5 a numeric vector
APIP a numeric vector
APLF a numeric vector
APLN a numeric vector
APLNR a numeric vector

APLP1 a numeric vector
APLP2 a numeric vector
APMAP a numeric vector
APOA1 a numeric vector
APOA2 a numeric vector
APOA4 a numeric vector
APOA5 a numeric vector
APOB a numeric vector
APOBEC1 a numeric vector
APOBEC2 a numeric vector
APOBEC3A a numeric vector
APOBEC3B a numeric vector
APOBEC3C a numeric vector
APOBEC3D a numeric vector
APOBEC3F a numeric vector
APOBEC3G a numeric vector
APOBEC3H a numeric vector
APOBEC4 a numeric vector
APOBR a numeric vector
APOC1 a numeric vector
APOC2 a numeric vector
APOC3 a numeric vector
APOC4 a numeric vector
APOC4.APOC2 a numeric vector
APOD a numeric vector
APOE a numeric vector
APOF a numeric vector
APOH a numeric vector
APOL1 a numeric vector
APOL2 a numeric vector
APOL3 a numeric vector
APOL4 a numeric vector
APOL5 a numeric vector
APOL6 a numeric vector
APOLD1 a numeric vector
APOM a numeric vector
APOO a numeric vector

APOOL a numeric vector
APP a numeric vector
APPBP2 a numeric vector
APPL1 a numeric vector
APPL2 a numeric vector
APRT a numeric vector
APTX a numeric vector
AQP1 a numeric vector
AQP10 a numeric vector
AQP11 a numeric vector
AQP12A a numeric vector
AQP12B a numeric vector
AQP2 a numeric vector
AQP3 a numeric vector
AQP4 a numeric vector
AQP5 a numeric vector
AQP6 a numeric vector
AQP7 a numeric vector
AQP8 a numeric vector
AQP9 a numeric vector
AQR a numeric vector
AR a numeric vector
ARAF a numeric vector
ARAP1 a numeric vector
ARAP2 a numeric vector
ARAP3 a numeric vector
ARC a numeric vector
ARCN1 a numeric vector
AREG a numeric vector
AREL1 a numeric vector
ARF1 a numeric vector
ARF3 a numeric vector
ARF4 a numeric vector
ARF5 a numeric vector
ARF6 a numeric vector
ARFGAP1 a numeric vector
ARFGAP2 a numeric vector

ARFGAP3 a numeric vector
ARFGEF1 a numeric vector
ARFGEF2 a numeric vector
ARFGEF3 a numeric vector
ARFIP1 a numeric vector
ARFIP2 a numeric vector
ARFRP1 a numeric vector
ARG1 a numeric vector
ARG2 a numeric vector
ARGFX a numeric vector
ARGLU1 a numeric vector
ARHGAP1 a numeric vector
ARHGAP10 a numeric vector
ARHGAP11A a numeric vector
ARHGAP11B a numeric vector
ARHGAP12 a numeric vector
ARHGAP15 a numeric vector
ARHGAP17 a numeric vector
ARHGAP18 a numeric vector
ARHGAP19 a numeric vector
ARHGAP19.SLIT1 a numeric vector
ARHGAP20 a numeric vector
ARHGAP21 a numeric vector
ARHGAP22 a numeric vector
ARHGAP23 a numeric vector
ARHGAP24 a numeric vector
ARHGAP25 a numeric vector
ARHGAP26 a numeric vector
ARHGAP27 a numeric vector
ARHGAP28 a numeric vector
ARHGAP29 a numeric vector
ARHGAP30 a numeric vector
ARHGAP31 a numeric vector
ARHGAP32 a numeric vector
ARHGAP33 a numeric vector
ARHGAP35 a numeric vector
ARHGAP36 a numeric vector

ARHGAP39 a numeric vector
ARHGAP4 a numeric vector
ARHGAP40 a numeric vector
ARHGAP42 a numeric vector
ARHGAP44 a numeric vector
ARHGAP45 a numeric vector
ARHGAP5 a numeric vector
ARHGAP6 a numeric vector
ARHGAP8 a numeric vector
ARHGAP9 a numeric vector
ARHGDIA a numeric vector
ARHGDIB a numeric vector
ARHGDIG a numeric vector
ARHGEF1 a numeric vector
ARHGEF10 a numeric vector
ARHGEF10L a numeric vector
ARHGEF11 a numeric vector
ARHGEF12 a numeric vector
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ARHGEF16 a numeric vector
ARHGEF17 a numeric vector
ARHGEF18 a numeric vector
ARHGEF19 a numeric vector
ARHGEF2 a numeric vector
ARHGEF25 a numeric vector
ARHGEF26 a numeric vector
ARHGEF28 a numeric vector
ARHGEF3 a numeric vector
ARHGEF33 a numeric vector
ARHGEF35 a numeric vector
ARHGEF37 a numeric vector
ARHGEF38 a numeric vector
ARHGEF39 a numeric vector
ARHGEF4 a numeric vector
ARHGEF40 a numeric vector
ARHGEF5 a numeric vector
ARHGEF6 a numeric vector

ARHGEF7 a numeric vector
ARHGEF9 a numeric vector
ARID1A a numeric vector
ARID1B a numeric vector
ARID2 a numeric vector
ARID3A a numeric vector
ARID3B a numeric vector
ARID3BP1 a numeric vector
ARID3C a numeric vector
ARID4A a numeric vector
ARID4B a numeric vector
ARID5A a numeric vector
ARID5B a numeric vector
ARIH1 a numeric vector
ARIH2 a numeric vector
ARL1 a numeric vector
ARL10 a numeric vector
ARL11 a numeric vector
ARL13A a numeric vector
ARL13B a numeric vector
ARL14 a numeric vector
ARL14EP a numeric vector
ARL14EPL a numeric vector
ARL15 a numeric vector
ARL16 a numeric vector
ARL17A a numeric vector
ARL17B a numeric vector
ARL2 a numeric vector
ARL2.SNX15 a numeric vector
ARL2BP a numeric vector
ARL3 a numeric vector
ARL4A a numeric vector
ARL4C a numeric vector
ARL4D a numeric vector
ARL5A a numeric vector
ARL5B a numeric vector
ARL5C a numeric vector

ARL6 a numeric vector
ARL6IP1 a numeric vector
ARL6IP4 a numeric vector
ARL6IP5 a numeric vector
ARL6IP6 a numeric vector
ARL8A a numeric vector
ARL8B a numeric vector
ARL9 a numeric vector
ARMC1 a numeric vector
ARMC10 a numeric vector
ARMC12 a numeric vector
ARMC2 a numeric vector
ARMC3 a numeric vector
ARMC4 a numeric vector
ARMC5 a numeric vector
ARMC6 a numeric vector
ARMC7 a numeric vector
ARMC8 a numeric vector
ARMC9 a numeric vector
ARMCX1 a numeric vector
ARMCX2 a numeric vector
ARMCX3 a numeric vector
ARMCX4 a numeric vector
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ARMCX5.GPRASP2 a numeric vector
ARMCX6 a numeric vector
ARMH1 a numeric vector
ARMH2 a numeric vector
ARMH3 a numeric vector
ARMH4 a numeric vector
ARMS2 a numeric vector
ARMT1 a numeric vector
ARNT a numeric vector
ARNT2 a numeric vector
ARNTL a numeric vector
ARNTL2 a numeric vector
ARPC1A a numeric vector

ARPC1B a numeric vector
ARPC2 a numeric vector
ARPC3 a numeric vector
ARPC4 a numeric vector
ARPC4.TTLL3 a numeric vector
ARPC5 a numeric vector
ARPC5L a numeric vector
ARPIN a numeric vector
ARPIN.AP3S2 a numeric vector
ARPP19 a numeric vector
ARPP21 a numeric vector
ARR3 a numeric vector
ARRB1 a numeric vector
ARRB2 a numeric vector
ARRDC1 a numeric vector
ARRDC2 a numeric vector
ARRDC3 a numeric vector
ARRDC4 a numeric vector
ARRDC5 a numeric vector
ARSA a numeric vector
ARSB a numeric vector
ARSD a numeric vector
ARSF a numeric vector
ARSG a numeric vector
ARSH a numeric vector
ARSI a numeric vector
ARSJ a numeric vector
ARSK a numeric vector
ARSL a numeric vector
ART1 a numeric vector
ART3 a numeric vector
ART4 a numeric vector
ART5 a numeric vector
ARTN a numeric vector
ARV1 a numeric vector
ARVCF a numeric vector
ARX a numeric vector

AS3MT a numeric vector
ASAH1 a numeric vector
ASAH2 a numeric vector
ASAH2B a numeric vector
ASAP1 a numeric vector
ASAP2 a numeric vector
ASAP3 a numeric vector
ASB1 a numeric vector
ASB10 a numeric vector
ASB11 a numeric vector
ASB12 a numeric vector
ASB13 a numeric vector
ASB14 a numeric vector
ASB15 a numeric vector
ASB16 a numeric vector
ASB17 a numeric vector
ASB18 a numeric vector
ASB2 a numeric vector
ASB3 a numeric vector
ASB4 a numeric vector
ASB5 a numeric vector
ASB6 a numeric vector
ASB7 a numeric vector
ASB8 a numeric vector
ASB9 a numeric vector
ASCC1 a numeric vector
ASCC2 a numeric vector
ASCC3 a numeric vector
ASCL1 a numeric vector
ASCL2 a numeric vector
ASCL3 a numeric vector
ASCL4 a numeric vector
ASCL5 a numeric vector
ASDURF a numeric vector
ASF1A a numeric vector
ASF1B a numeric vector
ASGR1 a numeric vector

ASGR2 a numeric vector
ASH1L a numeric vector
ASH2L a numeric vector
ASIC1 a numeric vector
ASIC2 a numeric vector
ASIC3 a numeric vector
ASIC4 a numeric vector
ASIC5 a numeric vector
ASIP a numeric vector
ASL a numeric vector
ASMT a numeric vector
ASMTL a numeric vector
ASNS a numeric vector
ASNSD1 a numeric vector
ASPA a numeric vector
ASPDH a numeric vector
ASPG a numeric vector
ASPH a numeric vector
ASPHD1 a numeric vector
ASPHD2 a numeric vector
ASPM a numeric vector
ASPN a numeric vector
ASPRV1 a numeric vector
ASPSCR1 a numeric vector
ASRGL1 a numeric vector
ASS1 a numeric vector
ASTE1 a numeric vector
ASTL a numeric vector
ASTN1 a numeric vector
ASTN2 a numeric vector
ASXL1 a numeric vector
ASXL2 a numeric vector
ASXL3 a numeric vector
ASZ1 a numeric vector
ATAD1 a numeric vector
ATAD2 a numeric vector
ATAD2B a numeric vector

ATAD3A a numeric vector
ATAD3B a numeric vector
ATAD3C a numeric vector
ATAD5 a numeric vector
ATAT1 a numeric vector
ATCAY a numeric vector
ATE1 a numeric vector
ATF1 a numeric vector
ATF2 a numeric vector
ATF3 a numeric vector
ATF4 a numeric vector
ATF5 a numeric vector
ATF6 a numeric vector
ATF6B a numeric vector
ATF7 a numeric vector
ATF7.NPFF a numeric vector
ATF7IP a numeric vector
ATF7IP2 a numeric vector
ATG10 a numeric vector
ATG101 a numeric vector
ATG12 a numeric vector
ATG13 a numeric vector
ATG14 a numeric vector
ATG16L1 a numeric vector
ATG16L2 a numeric vector
ATG2A a numeric vector
ATG2B a numeric vector
ATG3 a numeric vector
ATG4A a numeric vector
ATG4B a numeric vector
ATG4C a numeric vector
ATG4D a numeric vector
ATG5 a numeric vector
ATG7 a numeric vector
ATG9A a numeric vector
ATG9B a numeric vector
ATIC a numeric vector

ATL1 a numeric vector
ATL2 a numeric vector
ATL3 a numeric vector
ATM a numeric vector
ATMIN a numeric vector
ATN1 a numeric vector
ATOH1 a numeric vector
ATOH7 a numeric vector
ATOH8 a numeric vector
ATOX1 a numeric vector
ATP10A a numeric vector
ATP10B a numeric vector
ATP10D a numeric vector
ATP11A a numeric vector
ATP11B a numeric vector
ATP11C a numeric vector
ATP12A a numeric vector
ATP13A1 a numeric vector
ATP13A2 a numeric vector
ATP13A3 a numeric vector
ATP13A4 a numeric vector
ATP13A5 a numeric vector
ATP1A1 a numeric vector
ATP1A2 a numeric vector
ATP1A3 a numeric vector
ATP1A4 a numeric vector
ATP1B1 a numeric vector
ATP1B2 a numeric vector
ATP1B3 a numeric vector
ATP1B4 a numeric vector
ATP23 a numeric vector
ATP2A1 a numeric vector
ATP2A2 a numeric vector
ATP2A3 a numeric vector
ATP2B1 a numeric vector
ATP2B2 a numeric vector
ATP2B3 a numeric vector

ATP2B4 a numeric vector
ATP2C1 a numeric vector
ATP2C2 a numeric vector
ATP4A a numeric vector
ATP4B a numeric vector
ATP5F1A a numeric vector
ATP5F1B a numeric vector
ATP5F1C a numeric vector
ATP5F1D a numeric vector
ATP5F1E a numeric vector
ATP5IF1 a numeric vector
ATP5MC1 a numeric vector
ATP5MC2 a numeric vector
ATP5MC3 a numeric vector
ATP5MD a numeric vector
ATP5ME a numeric vector
ATP5MF a numeric vector
ATP5MF.PTCD1 a numeric vector
ATP5MG a numeric vector
ATP5MGL a numeric vector
ATP5MPL a numeric vector
ATP5PB a numeric vector
ATP5PD a numeric vector
ATP5PF a numeric vector
ATP5PO a numeric vector
ATP6AP1 a numeric vector
ATP6AP1L a numeric vector
ATP6AP2 a numeric vector
ATP6V0A1 a numeric vector
ATP6V0A2 a numeric vector
ATP6V0A4 a numeric vector
ATP6V0B a numeric vector
ATP6V0C a numeric vector
ATP6V0D1 a numeric vector
ATP6V0D2 a numeric vector
ATP6V0E1 a numeric vector
ATP6V0E2 a numeric vector

ATP6V1A a numeric vector
ATP6V1B1 a numeric vector
ATP6V1B2 a numeric vector
ATP6V1C1 a numeric vector
ATP6V1C2 a numeric vector
ATP6V1D a numeric vector
ATP6V1E1 a numeric vector
ATP6V1E2 a numeric vector
ATP6V1F a numeric vector
ATP6V1FNB a numeric vector
ATP6V1G1 a numeric vector
ATP6V1G2 a numeric vector
ATP6V1G2.DDX39B a numeric vector
ATP6V1G3 a numeric vector
ATP6V1H a numeric vector
ATP7A a numeric vector
ATP7B a numeric vector
ATP8A1 a numeric vector
ATP8A2 a numeric vector
ATP8B1 a numeric vector
ATP8B2 a numeric vector
ATP8B3 a numeric vector
ATP8B4 a numeric vector
ATP9A a numeric vector
ATP9B a numeric vector
ATPAF1 a numeric vector
ATPAF2 a numeric vector
ATPSCKMT a numeric vector
ATR a numeric vector
ATRAID a numeric vector
ATRIP a numeric vector
ATRN a numeric vector
ATRNL1 a numeric vector
ATRX a numeric vector
ATXN1 a numeric vector
ATXN10 a numeric vector
ATXN1L a numeric vector

ATXN2 a numeric vector
ATXN2L a numeric vector
ATXN3 a numeric vector
ATXN3L a numeric vector
ATXN7 a numeric vector
ATXN7L1 a numeric vector
ATXN7L2 a numeric vector
ATXN7L3 a numeric vector
ATXN7L3B a numeric vector
AUH a numeric vector
AUNIP a numeric vector
AUP1 a numeric vector
AURKA a numeric vector
AURKAIP1 a numeric vector
AURKB a numeric vector
AURKC a numeric vector
AUTS2 a numeric vector
AVEN a numeric vector
AVIL a numeric vector
AVL9 a numeric vector
AVP a numeric vector
AVPI1 a numeric vector
AVPR1A a numeric vector
AVPR1B a numeric vector
AVPR2 a numeric vector
AWAT1 a numeric vector
AWAT2 a numeric vector
AXDND1 a numeric vector
AXIN1 a numeric vector
AXIN2 a numeric vector
AXL a numeric vector
AZGP1 a numeric vector
AZI2 a numeric vector
AZIN1 a numeric vector
AZIN2 a numeric vector
AZU1 a numeric vector
B2M a numeric vector

B3GALNT1 a numeric vector
B3GALNT2 a numeric vector
B3GALT1 a numeric vector
B3GALT2 a numeric vector
B3GALT4 a numeric vector
B3GALT5 a numeric vector
B3GALT6 a numeric vector
B3GAT1 a numeric vector
B3GAT2 a numeric vector
B3GAT3 a numeric vector
B3GLCT a numeric vector
B3GNT10 a numeric vector
B3GNT2 a numeric vector
B3GNT3 a numeric vector
B3GNT4 a numeric vector
B3GNT5 a numeric vector
B3GNT6 a numeric vector
B3GNT7 a numeric vector
B3GNT8 a numeric vector
B3GNT9 a numeric vector
B3GNTL1 a numeric vector
B4GALNT1 a numeric vector
B4GALNT2 a numeric vector
B4GALNT3 a numeric vector
B4GALNT4 a numeric vector
B4GALT1 a numeric vector
B4GALT2 a numeric vector
B4GALT3 a numeric vector
B4GALT4 a numeric vector
B4GALT5 a numeric vector
B4GALT6 a numeric vector
B4GALT7 a numeric vector
B4GAT1 a numeric vector
B9D1 a numeric vector
B9D2 a numeric vector
BAALC a numeric vector
BAAT a numeric vector

BABAM1 a numeric vector
BABAM2 a numeric vector
BACE1 a numeric vector
BACE2 a numeric vector
BACH1 a numeric vector
BACH2 a numeric vector
BAD a numeric vector
BAG1 a numeric vector
BAG2 a numeric vector
BAG3 a numeric vector
BAG4 a numeric vector
BAG5 a numeric vector
BAG6 a numeric vector
BAHCC1 a numeric vector
BAHD1 a numeric vector
BAIAP2 a numeric vector
BAIAP2L1 a numeric vector
BAIAP2L2 a numeric vector
BAIAP3 a numeric vector
BAK1 a numeric vector
BAMBI a numeric vector
BANF1 a numeric vector
BANF2 a numeric vector
BANK1 a numeric vector
BANP a numeric vector
BAP1 a numeric vector
BARD1 a numeric vector
BARHL1 a numeric vector
BARHL2 a numeric vector
BARX1 a numeric vector
BARX2 a numeric vector
BASP1 a numeric vector
BATF a numeric vector
BATF2 a numeric vector
BATF3 a numeric vector
BAX a numeric vector
BAZ1A a numeric vector
BAZ1B a numeric vector
BAZ2A a numeric vector

Details

This is Test Norm data.

Value

Returns a dataframe.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(Test_Norm_data)
## maybe str(Test_Norm_data)
## plot(Test_Norm_data)
```

Test_PI_data	<i>Test PI data</i>
--------------	---------------------

Description

This is Test PI data.

Usage

```
data("Test_PI_data")
```

Format

A data frame with 18 observations on the following 57 variables.

OS a numeric vector
OS_month a numeric vector
AADACL4 a numeric vector
ABCA12 a numeric vector
ABCC3 a numeric vector
ABI1 a numeric vector
ABRA a numeric vector
AC006059.2 a numeric vector
AC008676.3 a numeric vector
AC008764.4 a numeric vector
AC010132.3 a numeric vector
AC012651.1 a numeric vector

AC013477.1 a numeric vector
AC109583.1 a numeric vector
AC113348.2 a numeric vector
AC117457.1 a numeric vector
AC131160.1 a numeric vector
AC144573.1 a numeric vector
AC235565.2 a numeric vector
AC02 a numeric vector
ACTC1 a numeric vector
ACTL9 a numeric vector
ACTRT2 a numeric vector
ADD3 a numeric vector
ADGRL3 a numeric vector
ADH7 a numeric vector
ADPRHL1 a numeric vector
ADRA2A a numeric vector
ADRA2B a numeric vector
AFMID a numeric vector
AKAP12 a numeric vector
AKAP14 a numeric vector
AKAP3 a numeric vector
AL139260.3 a numeric vector
ALG6 a numeric vector
ANGPTL6 a numeric vector
ANKRD20A1 a numeric vector
ANXA6 a numeric vector
ANXA8L1 a numeric vector
AOC2 a numeric vector
APOBEC1 a numeric vector
APOE a numeric vector
ARHGAP11B a numeric vector
ARHGAP12 a numeric vector
ARHGEF19 a numeric vector
ARL2.SNX15 a numeric vector
ARL6IP1 a numeric vector
ARPC4.TTLL3 a numeric vector
ASB4 a numeric vector

ASB5 a numeric vector
ASB6 a numeric vector
ASPM a numeric vector
ATP1A2 a numeric vector
ATP2B4 a numeric vector
AZGP1 a numeric vector
B3GAT2 a numeric vector
PI a numeric vector

Details

This is Test PI data.

Value

A data frame with columns X and Y.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(Test_PI_data)
## maybe str(Test_PI_data)
## plot(Test_PI_data)
```

Test_results

Test Results for Survival Prediction

Description

A data frame containing survival prediction results for test samples. The data includes actual risk group labels, predicted risk groups, probabilities for each class, and overall survival data for the test samples.

Usage

```
data(Test_results)
```

Format

A data frame with 18 observations and 8 variables:

Sample_ID Character vector with the unique sample identifier (e.g., "TCGA-E1-A7Z6-01").

Actual Factor indicating the actual risk group: "High_Risk" or "Low_Risk".

Predicted_Risk_Group Factor indicating the predicted risk group: "High_Risk" or "Low_Risk".

High_Risk_Prob Numeric value representing the probability of the sample being classified as High Risk.

Low_Risk_Prob Numeric value representing the probability of the sample being classified as Low Risk.

Prediction_Prob Numeric value representing the maximum class probability (confidence in prediction).

OS_month Integer representing the overall survival time in months.

OS_event Integer indicating the survival event: 1 = death, 0 = censored.

Source

The data was derived from TCGA (The Cancer Genome Atlas) using survival prediction models.

Test_Uni_sig_data	<i>Test Uni sig data</i>
-------------------	--------------------------

Description

This is Test Uni sig data.

Usage

```
data("Test_Uni_sig_data")
```

Format

A data frame with 18 observations on the following 209 variables.

A2ML1 a numeric vector

AADACL4 a numeric vector

AAMDC a numeric vector

AAR2 a numeric vector

ABCA12 a numeric vector

ABCB4 a numeric vector

ABCB5 a numeric vector

ABCB6 a numeric vector

ABCC3 a numeric vector

ABCC9 a numeric vector
ABCE1 a numeric vector
ABCF3 a numeric vector
ABHD12 a numeric vector
ABHD14B a numeric vector
ABLIM1 a numeric vector
ABLIM3 a numeric vector
ABT1 a numeric vector
AC004076.1 a numeric vector
AC005520.1 a numeric vector
AC005832.4 a numeric vector
AC006030.1 a numeric vector
AC008764.4 a numeric vector
AC010132.3 a numeric vector
AC013470.2 a numeric vector
AC027796.3 a numeric vector
AC097636.1 a numeric vector
AC106741.1 a numeric vector
AC131160.1 a numeric vector
AC132217.2 a numeric vector
AC144573.1 a numeric vector
ACAP2 a numeric vector
ACBD5 a numeric vector
ACE a numeric vector
ACMSD a numeric vector
AC01 a numeric vector
AC02 a numeric vector
ACP5 a numeric vector
ACRV1 a numeric vector
ACSBG1 a numeric vector
ACSM5 a numeric vector
ACSM6 a numeric vector
ACTG1 a numeric vector
ACTN1 a numeric vector
ACTR3 a numeric vector
ADAM12 a numeric vector
ADAM15 a numeric vector

ADAM19 a numeric vector
ADAM32 a numeric vector
ADAMTS18 a numeric vector
ADAMTS7 a numeric vector
ADAMTS8 a numeric vector
ADCK2 a numeric vector
ADCY2 a numeric vector
ADCY8 a numeric vector
ADD3 a numeric vector
ADGRB3 a numeric vector
ADGRD2 a numeric vector
ADGRE2 a numeric vector
ADGRE5 a numeric vector
ADGRG7 a numeric vector
ADGRL4 a numeric vector
ADGRV1 a numeric vector
ADH4 a numeric vector
ADHFE1 a numeric vector
ADK a numeric vector
ADNP a numeric vector
ADPRH a numeric vector
ADRB2 a numeric vector
ADRM1 a numeric vector
AEN a numeric vector
AFAP1L2 a numeric vector
AGAP1 a numeric vector
AGGF1 a numeric vector
AGPS a numeric vector
AGR3 a numeric vector
AGRN a numeric vector
AHCYL1 a numeric vector
AHNAK a numeric vector
AK2 a numeric vector
AK8 a numeric vector
AKAP3 a numeric vector
AKAP4 a numeric vector
AKAP6 a numeric vector

AKIP1 a numeric vector
AKR1C1 a numeric vector
AL121845.3 a numeric vector
AL160272.2 a numeric vector
AL365214.2 a numeric vector
AL391628.1 a numeric vector
AL445989.1 a numeric vector
AL591806.2 a numeric vector
AL669918.1 a numeric vector
ALDH9A1 a numeric vector
ALDOB a numeric vector
ALDOC a numeric vector
ALG10B a numeric vector
ALG2 a numeric vector
ALG3 a numeric vector
ALG6 a numeric vector
ALKBH3 a numeric vector
ALOX5AP a numeric vector
ALYREF a numeric vector
AMDHD1 a numeric vector
AMPD3 a numeric vector
ANGPTL2 a numeric vector
ANGPTL5 a numeric vector
ANKFY1 a numeric vector
ANKLE2 a numeric vector
ANKRD20A1 a numeric vector
ANKRD24 a numeric vector
ANKRD29 a numeric vector
ANKRD36 a numeric vector
ANKRD36C a numeric vector
ANO2 a numeric vector
ANPEP a numeric vector
ANXA1 a numeric vector
ANXA7 a numeric vector
AP003108.2 a numeric vector
AP3S1 a numeric vector
AP3S2 a numeric vector

APEH a numeric vector
APEX2 a numeric vector
APH1A a numeric vector
APLN a numeric vector
APOBEC3B a numeric vector
APOBEC3G a numeric vector
APOBR a numeric vector
APOE a numeric vector
APOL1 a numeric vector
APOL4 a numeric vector
APPBP2 a numeric vector
AQP10 a numeric vector
AQP7 a numeric vector
ARAP3 a numeric vector
ARF4 a numeric vector
ARFGAP2 a numeric vector
ARHGAP11A a numeric vector
ARHGAP11B a numeric vector
ARHGAP24 a numeric vector
ARHGAP32 a numeric vector
ARHGDIG a numeric vector
ARHGEF17 a numeric vector
ARHGEF19 a numeric vector
ARL1 a numeric vector
ARL15 a numeric vector
ARL2.SNX15 a numeric vector
ARL5C a numeric vector
ARL6IP6 a numeric vector
ARMC4 a numeric vector
ARMC6 a numeric vector
ARMC9 a numeric vector
ARPC3 a numeric vector
ARPC4 a numeric vector
ARPP21 a numeric vector
ARSA a numeric vector
ARSI a numeric vector
ARSL a numeric vector

ART4 a numeric vector
ASAH2 a numeric vector
ASAP1 a numeric vector
ASB12 a numeric vector
ASCC3 a numeric vector
ASF1B a numeric vector
ASIC4 a numeric vector
ASPH a numeric vector
ASPM a numeric vector
ATAD2 a numeric vector
ATAD5 a numeric vector
ATG9B a numeric vector
ATIC a numeric vector
ATP11A a numeric vector
ATP11C a numeric vector
ATP13A4 a numeric vector
ATP1B2 a numeric vector
ATP1B3 a numeric vector
ATP2A3 a numeric vector
ATP2B1 a numeric vector
ATP4B a numeric vector
ATP5F1D a numeric vector
ATP5MC2 a numeric vector
ATP5ME a numeric vector
ATP6V0A4 a numeric vector
ATP9B a numeric vector
ATR a numeric vector
ATRAID a numeric vector
ATRIP a numeric vector
ATXN7 a numeric vector
AUNIP a numeric vector
AURKA a numeric vector
AVPI1 a numeric vector
AWAT1 a numeric vector
AZU1 a numeric vector
B3GAT2 a numeric vector
B3GNT7 a numeric vector

B3GNT8 a numeric vector
B4GALNT2 a numeric vector
B4GALT3 a numeric vector
B4GALT7 a numeric vector
B4GAT1 a numeric vector
BACH2 a numeric vector
BAG3 a numeric vector
BAG5 a numeric vector
BAHD1 a numeric vector
BAIAP3 a numeric vector
BANK1 a numeric vector
BASP1 a numeric vector
BATF2 a numeric vector
BAX a numeric vector
BAZ1B a numeric vector

Details

This is Test Uni sig data.

Value

A data frame with columns X and Y.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(Test_Uni_sig_data)
## maybe str(Test_Uni_sig_data)
## plot(Test_Uni_sig_data)
```

tr_test_f	<i>Train-Test Split Function</i>
-----------	----------------------------------

Description

This function splits a given dataset into training and testing sets based on a specified fraction.

Usage

```
tr_test_f(data, fraction)
```

Arguments

data	A data frame containing the dataset to be split.
fraction	A numeric value between 0 and 1 indicating the proportion of data to include in the training set.

Details

The function checks whether the input data is valid and whether the `fraction` is a number between 0 and 1. It then performs a random split of the dataset into training and testing sets.

Value

A list containing two data frames:

train_data A data frame containing the training set.

test_data A data frame containing the testing set.

Examples

```
# Example dataset
data <- data.frame(x = rnorm(100), y = rnorm(100))
fraction <- 0.7
result <- tr_test_f(data, fraction)
head(result$train_data)
head(result$test_data)
```

Train_Clin

Train Clin

Description

This is Train Clin.

Usage

```
data("Train_Clin")
```

Format

A data frame with 158 observations on the following 20 variables.

Age a numeric vector

subtype a character vector

gender a character vector

race a character vector

ajcc_pathologic_tumor_stage a logical vector

histological_type a character vector

histological_grade a character vector

treatment_outcome_first_course a character vector

radiation_treatment_adjuvant a character vector

sample_type a character vector

type a character vector

OS a numeric vector

OS.time a numeric vector

DSS a numeric vector

DSS.time a numeric vector

DFI a numeric vector

DFI.time a numeric vector

PFI a numeric vector

PFI.time a numeric vector

OS_month a numeric vector

Details

This is Train Clin.

Value

A data frame with columns X and Y.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(Train_Clin)
## maybe str(Train_Clin)
## plot(Train_Clin)
```

Train_Data_Nomogram_input

Train Data Nomogram input

Description

This is Train Data Nomogram input.

Usage

```
data("Train_Data_Nomogram_input")
```

Format

A data frame with 158 observations on the following 34 variables.

Age a numeric vector

subtype a character vector

gender a character vector

race a character vector

ajcc_pathologic_tumor_stage a logical vector

histological_type a character vector

histological_grade a character vector

treatment_outcome_first_course a character vector

radiation_treatment_adjuvant a character vector

sample_type a character vector

type a character vector

OS a numeric vector

OS.time a numeric vector

DSS a numeric vector

DSS.time a numeric vector

DFI a numeric vector

DFI.time a numeric vector

PFI a numeric vector
PFI.time a numeric vector
OS_month a numeric vector
OS_month a numeric vector
ALG6 a numeric vector
ARHGAP11A a numeric vector
DESI1 a numeric vector
GALNT7 a numeric vector
GJD3 a numeric vector
GPC1 a numeric vector
H2BC5 a numeric vector
HOXD12 a numeric vector
RNF185 a numeric vector
TANG02 a numeric vector
UNG a numeric vector
ZNF648 a numeric vector
PI a numeric vector

Details

This is Train Data Nomogram input.

Value

A data frame with columns X and Y.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(Train_Data_Nomogram_input)
## maybe str(Train_Data_Nomogram_input)
## plot(Train_Data_Nomogram_input)
```

train_FPKM	<i>train FPKM</i>
------------	-------------------

Description

This is train FPKM.

Usage

```
data("train_FPKM")
```

Format

A data frame with 158 observations on the following 2025 variables.

Age a numeric vector
subtype a character vector
gender a character vector
race a character vector
ajcc_pathologic_tumor_stage a logical vector
histological_type a character vector
histological_grade a character vector
treatment_outcome_first_course a character vector
radiation_treatment_adjuvant a character vector
sample_type a character vector
type a character vector
OS a numeric vector
OS.time a numeric vector
DSS a numeric vector
DSS.time a numeric vector
DFI a numeric vector
DFI.time a numeric vector
PFI a numeric vector
PFI.time a numeric vector
OS_month a numeric vector
A1BG a numeric vector
A1CF a numeric vector
A2M a numeric vector
A2ML1 a numeric vector
A3GALT2 a numeric vector

A4GALT a numeric vector
A4GNT a numeric vector
AAAS a numeric vector
AACS a numeric vector
AADAC a numeric vector
AADACL2 a numeric vector
AADACL3 a numeric vector
AADACL4 a numeric vector
AADAT a numeric vector
AAGAB a numeric vector
AAK1 a numeric vector
AAMDC a numeric vector
AAMP a numeric vector
AANAT a numeric vector
AAR2 a numeric vector
AARD a numeric vector
AARS1 a numeric vector
AARS2 a numeric vector
AARSD1 a numeric vector
AASDH a numeric vector
AASDHPPT a numeric vector
AASS a numeric vector
AATF a numeric vector
AATK a numeric vector
ABAT a numeric vector
ABCA1 a numeric vector
ABCA10 a numeric vector
ABCA12 a numeric vector
ABCA13 a numeric vector
ABCA2 a numeric vector
ABCA3 a numeric vector
ABCA4 a numeric vector
ABCA5 a numeric vector
ABCA6 a numeric vector
ABCA7 a numeric vector
ABCA8 a numeric vector
ABCA9 a numeric vector

ABCB1 a numeric vector
ABCB10 a numeric vector
ABCB11 a numeric vector
ABCB4 a numeric vector
ABCB5 a numeric vector
ABCB6 a numeric vector
ABCB7 a numeric vector
ABCB8 a numeric vector
ABCB9 a numeric vector
ABCC1 a numeric vector
ABCC10 a numeric vector
ABCC11 a numeric vector
ABCC12 a numeric vector
ABCC2 a numeric vector
ABCC3 a numeric vector
ABCC4 a numeric vector
ABCC5 a numeric vector
ABCC6 a numeric vector
ABCC8 a numeric vector
ABCC9 a numeric vector
ABCD1 a numeric vector
ABCD2 a numeric vector
ABCD3 a numeric vector
ABCD4 a numeric vector
ABCE1 a numeric vector
ABCF1 a numeric vector
ABCF2 a numeric vector
ABCF2.H2BE1 a numeric vector
ABCF3 a numeric vector
ABCG1 a numeric vector
ABCG2 a numeric vector
ABCG4 a numeric vector
ABCG5 a numeric vector
ABCG8 a numeric vector
ABHD1 a numeric vector
ABHD10 a numeric vector
ABHD11 a numeric vector

ABHD12 a numeric vector
ABHD12B a numeric vector
ABHD13 a numeric vector
ABHD14A a numeric vector
ABHD14A.ACY1 a numeric vector
ABHD14B a numeric vector
ABHD15 a numeric vector
ABHD16A a numeric vector
ABHD16B a numeric vector
ABHD17A a numeric vector
ABHD17B a numeric vector
ABHD17C a numeric vector
ABHD18 a numeric vector
ABHD2 a numeric vector
ABHD3 a numeric vector
ABHD4 a numeric vector
ABHD5 a numeric vector
ABHD6 a numeric vector
ABHD8 a numeric vector
ABI1 a numeric vector
ABI2 a numeric vector
ABI3 a numeric vector
ABI3BP a numeric vector
ABITRAM a numeric vector
ABL1 a numeric vector
ABL2 a numeric vector
ABLIM1 a numeric vector
ABLIM2 a numeric vector
ABLIM3 a numeric vector
ABO a numeric vector
ABR a numeric vector
ABRA a numeric vector
ABRACL a numeric vector
ABRAXAS1 a numeric vector
ABRAXAS2 a numeric vector
ABT1 a numeric vector
ABTB1 a numeric vector

ABTB2 a numeric vector
AC000093.1 a numeric vector
AC000120.2 a numeric vector
AC000120.3 a numeric vector
AC001226.2 a numeric vector
AC002094.3 a numeric vector
AC002310.4 a numeric vector
AC002456.2 a numeric vector
AC002985.1 a numeric vector
AC002996.1 a numeric vector
AC003002.1 a numeric vector
AC003002.2 a numeric vector
AC003002.3 a numeric vector
AC003005.1 a numeric vector
AC003006.1 a numeric vector
AC003688.1 a numeric vector
AC004076.1 a numeric vector
AC004080.3 a numeric vector
AC004223.3 a numeric vector
AC004233.4 a numeric vector
AC004593.2 a numeric vector
AC004687.2 a numeric vector
AC004691.2 a numeric vector
AC004706.3 a numeric vector
AC004805.1 a numeric vector
AC004832.3 a numeric vector
AC004922.1 a numeric vector
AC004997.1 a numeric vector
AC005020.2 a numeric vector
AC005041.1 a numeric vector
AC005154.5 a numeric vector
AC005192.1 a numeric vector
AC005258.1 a numeric vector
AC005324.2 a numeric vector
AC005324.3 a numeric vector
AC005520.1 a numeric vector
AC005551.1 a numeric vector

AC005670.2 a numeric vector
AC005697.1 a numeric vector
AC005702.1 a numeric vector
AC005726.1 a numeric vector
AC005832.4 a numeric vector
AC005833.1 a numeric vector
AC005837.2 a numeric vector
AC005943.1 a numeric vector
AC006030.1 a numeric vector
AC006059.2 a numeric vector
AC006064.6 a numeric vector
AC006254.1 a numeric vector
AC006486.1 a numeric vector
AC006486.3 a numeric vector
AC006538.2 a numeric vector
AC006978.2 a numeric vector
AC007040.2 a numeric vector
AC007192.1 a numeric vector
AC007326.4 a numeric vector
AC007375.2 a numeric vector
AC007731.4 a numeric vector
AC007846.2 a numeric vector
AC007906.2 a numeric vector
AC007998.2 a numeric vector
AC008012.1 a numeric vector
AC008073.3 a numeric vector
AC008162.2 a numeric vector
AC008397.1 a numeric vector
AC008397.2 a numeric vector
AC008403.1 a numeric vector
AC008481.3 a numeric vector
AC008537.1 a numeric vector
AC008575.1 a numeric vector
AC008581.2 a numeric vector
AC008676.3 a numeric vector
AC008687.1 a numeric vector
AC008687.4 a numeric vector

AC008687.8 a numeric vector
AC008695.1 a numeric vector
AC008750.7 a numeric vector
AC008758.1 a numeric vector
AC008758.5 a numeric vector
AC008758.6 a numeric vector
AC008763.2 a numeric vector
AC008763.3 a numeric vector
AC008763.4 a numeric vector
AC008764.1 a numeric vector
AC008764.4 a numeric vector
AC008770.1 a numeric vector
AC008770.2 a numeric vector
AC008770.4 a numeric vector
AC008878.1 a numeric vector
AC008878.2 a numeric vector
AC008878.3 a numeric vector
AC008982.1 a numeric vector
AC009070.1 a numeric vector
AC009133.6 a numeric vector
AC009163.3 a numeric vector
AC009163.5 a numeric vector
AC009412.1 a numeric vector
AC009690.1 a numeric vector
AC009690.3 a numeric vector
AC009779.3 a numeric vector
AC009879.2 a numeric vector
AC009879.3 a numeric vector
AC010132.3 a numeric vector
AC010197.2 a numeric vector
AC010255.2 a numeric vector
AC010319.2 a numeric vector
AC010323.1 a numeric vector
AC010325.1 a numeric vector
AC010326.2 a numeric vector
AC010327.2 a numeric vector
AC010422.3 a numeric vector

AC010422.5 a numeric vector
AC010422.6 a numeric vector
AC010422.8 a numeric vector
AC010463.1 a numeric vector
AC010522.1 a numeric vector
AC010531.1 a numeric vector
AC010542.3 a numeric vector
AC010547.4 a numeric vector
AC010615.4 a numeric vector
AC010616.1 a numeric vector
AC010619.1 a numeric vector
AC010646.1 a numeric vector
AC010973.3 a numeric vector
AC010980.1 a numeric vector
AC011005.1 a numeric vector
AC011330.3 a numeric vector
AC011448.1 a numeric vector
AC011452.1 a numeric vector
AC011455.2 a numeric vector
AC011462.1 a numeric vector
AC011473.4 a numeric vector
AC011479.1 a numeric vector
AC011498.4 a numeric vector
AC011499.1 a numeric vector
AC011511.1 a numeric vector
AC011511.4 a numeric vector
AC011530.1 a numeric vector
AC012184.2 a numeric vector
AC012213.5 a numeric vector
AC012254.2 a numeric vector
AC012309.1 a numeric vector
AC012488.2 a numeric vector
AC012531.3 a numeric vector
AC012651.1 a numeric vector
AC013271.1 a numeric vector
AC013394.1 a numeric vector
AC013470.2 a numeric vector

AC013477.1 a numeric vector
AC013489.1 a numeric vector
AC013717.1 a numeric vector
AC015688.4 a numeric vector
AC015802.6 a numeric vector
AC015813.2 a numeric vector
AC017083.3 a numeric vector
AC018362.3 a numeric vector
AC018512.1 a numeric vector
AC018523.2 a numeric vector
AC018630.4 a numeric vector
AC018709.1 a numeric vector
AC018755.2 a numeric vector
AC018809.3 a numeric vector
AC019117.3 a numeric vector
AC019257.8 a numeric vector
AC020636.2 a numeric vector
AC020765.6 a numeric vector
AC020907.6 a numeric vector
AC020909.1 a numeric vector
AC020915.4 a numeric vector
AC020922.1 a numeric vector
AC021072.1 a numeric vector
AC021087.5 a numeric vector
AC021660.3 a numeric vector
AC022335.1 a numeric vector
AC022384.1 a numeric vector
AC022400.5 a numeric vector
AC022414.1 a numeric vector
AC022415.2 a numeric vector
AC022506.1 a numeric vector
AC022826.2 a numeric vector
AC023055.1 a numeric vector
AC024592.3 a numeric vector
AC024598.1 a numeric vector
AC025165.3 a numeric vector
AC025165.6 a numeric vector

AC025263.2 a numeric vector
AC025283.2 a numeric vector
AC025287.4 a numeric vector
AC026316.4 a numeric vector
AC026464.1 a numeric vector
AC026464.3 a numeric vector
AC026464.4 a numeric vector
AC026464.6 a numeric vector
AC026786.1 a numeric vector
AC026954.2 a numeric vector
AC027644.4 a numeric vector
AC027796.3 a numeric vector
AC034102.2 a numeric vector
AC034228.3 a numeric vector
AC036214.3 a numeric vector
AC037459.1 a numeric vector
AC040162.1 a numeric vector
AC046185.1 a numeric vector
AC048338.1 a numeric vector
AC048338.2 a numeric vector
AC053503.6 a numeric vector
AC055811.2 a numeric vector
AC055839.2 a numeric vector
AC058822.1 a numeric vector
AC063943.2 a numeric vector
AC067968.1 a numeric vector
AC068234.1 a numeric vector
AC068533.4 a numeric vector
AC068547.1 a numeric vector
AC068580.4 a numeric vector
AC068631.2 a numeric vector
AC068775.1 a numeric vector
AC068831.6 a numeric vector
AC068870.4 a numeric vector
AC068896.1 a numeric vector
AC068946.1 a numeric vector
AC068946.2 a numeric vector

AC069257.3 a numeric vector
AC069288.1 a numeric vector
AC069368.1 a numeric vector
AC069444.2 a numeric vector
AC069503.2 a numeric vector
AC069544.2 a numeric vector
AC072022.2 a numeric vector
AC073082.1 a numeric vector
AC073111.3 a numeric vector
AC073283.3 a numeric vector
AC073508.2 a numeric vector
AC073585.1 a numeric vector
AC073610.2 a numeric vector
AC073612.1 a numeric vector
AC073896.1 a numeric vector
AC074143.1 a numeric vector
AC078815.1 a numeric vector
AC078927.1 a numeric vector
AC079447.1 a numeric vector
AC079594.1 a numeric vector
AC079741.2 a numeric vector
AC083800.1 a numeric vector
AC083977.1 a numeric vector
AC084337.2 a numeric vector
AC084756.2 a numeric vector
AC087289.3 a numeric vector
AC087632.2 a numeric vector
AC087721.2 a numeric vector
AC090004.1 a numeric vector
AC090227.2 a numeric vector
AC090360.1 a numeric vector
AC090517.4 a numeric vector
AC090527.2 a numeric vector
AC091057.5 a numeric vector
AC091167.2 a numeric vector
AC091167.6 a numeric vector
AC091167.7 a numeric vector

AC091551.1 a numeric vector
AC091959.1 a numeric vector
AC092017.2 a numeric vector
AC092042.3 a numeric vector
AC092073.1 a numeric vector
AC092111.3 a numeric vector
AC092143.1 a numeric vector
AC092329.3 a numeric vector
AC092442.1 a numeric vector
AC092587.1 a numeric vector
AC092647.5 a numeric vector
AC092718.3 a numeric vector
AC092718.8 a numeric vector
AC092835.1 a numeric vector
AC093155.3 a numeric vector
AC093227.2 a numeric vector
AC093246.1 a numeric vector
AC093323.1 a numeric vector
AC093423.3 a numeric vector
AC093512.2 a numeric vector
AC093525.1 a numeric vector
AC093525.2 a numeric vector
AC093668.1 a numeric vector
AC093827.5 a numeric vector
AC093884.1 a numeric vector
AC093899.2 a numeric vector
AC096887.1 a numeric vector
AC097104.1 a numeric vector
AC097625.1 a numeric vector
AC097634.4 a numeric vector
AC097636.1 a numeric vector
AC097637.1 a numeric vector
AC098484.3 a numeric vector
AC098582.1 a numeric vector
AC098588.2 a numeric vector
AC098650.1 a numeric vector
AC098850.3 a numeric vector

AC099489.1 a numeric vector
AC099569.1 a numeric vector
AC099811.2 a numeric vector
AC099850.2 a numeric vector
AC100868.1 a numeric vector
AC104109.3 a numeric vector
AC104304.2 a numeric vector
AC104389.5 a numeric vector
AC104389.6 a numeric vector
AC104452.1 a numeric vector
AC104472.3 a numeric vector
AC104532.1 a numeric vector
AC104581.2 a numeric vector
AC105001.2 a numeric vector
AC105052.1 a numeric vector
AC105052.3 a numeric vector
AC106741.1 a numeric vector
AC106873.8 a numeric vector
AC106886.5 a numeric vector
AC107871.1 a numeric vector
AC107959.5 a numeric vector
AC108488.2 a numeric vector
AC108941.3 a numeric vector
AC109583.1 a numeric vector
AC110275.1 a numeric vector
AC112128.1 a numeric vector
AC112229.3 a numeric vector
AC112504.2 a numeric vector
AC113189.12 a numeric vector
AC113348.1 a numeric vector
AC113348.2 a numeric vector
AC113554.1 a numeric vector
AC114402.2 a numeric vector
AC114490.2 a numeric vector
AC114490.3 a numeric vector
AC114982.2 a numeric vector
AC116366.2 a numeric vector

AC117378.1 a numeric vector
AC117457.1 a numeric vector
AC118470.1 a numeric vector
AC118553.2 a numeric vector
AC119396.1 a numeric vector
AC119674.2 a numeric vector
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AP4E1 a numeric vector
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AP4S1 a numeric vector
AP5B1 a numeric vector
AP5M1 a numeric vector
AP5S1 a numeric vector
AP5Z1 a numeric vector
APAF1 a numeric vector
APBA1 a numeric vector
APBA2 a numeric vector
APBA3 a numeric vector
APBB1 a numeric vector
APBB1IP a numeric vector
APBB2 a numeric vector
APBB3 a numeric vector
APC a numeric vector
APC2 a numeric vector
APCDD1 a numeric vector
APCDD1L a numeric vector
APCS a numeric vector
APEH a numeric vector
APELA a numeric vector
APEX1 a numeric vector
APEX2 a numeric vector
APH1A a numeric vector
APH1B a numeric vector
API5 a numeric vector
APIP a numeric vector
APLF a numeric vector
APLN a numeric vector
APLNR a numeric vector

APLP1 a numeric vector
APLP2 a numeric vector
APMAP a numeric vector
APOA1 a numeric vector
APOA2 a numeric vector
APOA4 a numeric vector
APOA5 a numeric vector
APOB a numeric vector
APOBEC1 a numeric vector
APOBEC2 a numeric vector
APOBEC3A a numeric vector
APOBEC3B a numeric vector
APOBEC3C a numeric vector
APOBEC3D a numeric vector
APOBEC3F a numeric vector
APOBEC3G a numeric vector
APOBEC3H a numeric vector
APOBEC4 a numeric vector
APOBR a numeric vector
APOC1 a numeric vector
APOC2 a numeric vector
APOC3 a numeric vector
APOC4 a numeric vector
APOC4.APOC2 a numeric vector
APOD a numeric vector
APOE a numeric vector
APOF a numeric vector
APOH a numeric vector
APOL1 a numeric vector
APOL2 a numeric vector
APOL3 a numeric vector
APOL4 a numeric vector
APOL5 a numeric vector
APOL6 a numeric vector
APOLD1 a numeric vector
APOM a numeric vector
APOO a numeric vector

APOOL a numeric vector
APP a numeric vector
APPBP2 a numeric vector
APPL1 a numeric vector
APPL2 a numeric vector
APRT a numeric vector
APTX a numeric vector
AQP1 a numeric vector
AQP10 a numeric vector
AQP11 a numeric vector
AQP12A a numeric vector
AQP12B a numeric vector
AQP2 a numeric vector
AQP3 a numeric vector
AQP4 a numeric vector
AQP5 a numeric vector
AQP6 a numeric vector
AQP7 a numeric vector
AQP8 a numeric vector
AQP9 a numeric vector
AQR a numeric vector
AR a numeric vector
ARAF a numeric vector
ARAP1 a numeric vector
ARAP2 a numeric vector
ARAP3 a numeric vector
ARC a numeric vector
ARCN1 a numeric vector
AREG a numeric vector
AREL1 a numeric vector
ARF1 a numeric vector
ARF3 a numeric vector
ARF4 a numeric vector
ARF5 a numeric vector
ARF6 a numeric vector
ARFGAP1 a numeric vector
ARFGAP2 a numeric vector

ARFGAP3 a numeric vector
ARFGEF1 a numeric vector
ARFGEF2 a numeric vector
ARFGEF3 a numeric vector
ARFIP1 a numeric vector
ARFIP2 a numeric vector
ARFRP1 a numeric vector
ARG1 a numeric vector
ARG2 a numeric vector
ARGFX a numeric vector
ARGLU1 a numeric vector
ARHGAP1 a numeric vector
ARHGAP10 a numeric vector
ARHGAP11A a numeric vector
ARHGAP11B a numeric vector
ARHGAP12 a numeric vector
ARHGAP15 a numeric vector
ARHGAP17 a numeric vector
ARHGAP18 a numeric vector
ARHGAP19 a numeric vector
ARHGAP19.SLIT1 a numeric vector
ARHGAP20 a numeric vector
ARHGAP21 a numeric vector
ARHGAP22 a numeric vector
ARHGAP23 a numeric vector
ARHGAP24 a numeric vector
ARHGAP25 a numeric vector
ARHGAP26 a numeric vector
ARHGAP27 a numeric vector
ARHGAP28 a numeric vector
ARHGAP29 a numeric vector
ARHGAP30 a numeric vector
ARHGAP31 a numeric vector
ARHGAP32 a numeric vector
ARHGAP33 a numeric vector
ARHGAP35 a numeric vector
ARHGAP36 a numeric vector

ARHGAP39 a numeric vector
ARHGAP4 a numeric vector
ARHGAP40 a numeric vector
ARHGAP42 a numeric vector
ARHGAP44 a numeric vector
ARHGAP45 a numeric vector
ARHGAP5 a numeric vector
ARHGAP6 a numeric vector
ARHGAP8 a numeric vector
ARHGAP9 a numeric vector
ARHGDIA a numeric vector
ARHGDIB a numeric vector
ARHGDIG a numeric vector
ARHGEF1 a numeric vector
ARHGEF10 a numeric vector
ARHGEF10L a numeric vector
ARHGEF11 a numeric vector
ARHGEF12 a numeric vector
ARHGEF15 a numeric vector
ARHGEF16 a numeric vector
ARHGEF17 a numeric vector
ARHGEF18 a numeric vector
ARHGEF19 a numeric vector
ARHGEF2 a numeric vector
ARHGEF25 a numeric vector
ARHGEF26 a numeric vector
ARHGEF28 a numeric vector
ARHGEF3 a numeric vector
ARHGEF33 a numeric vector
ARHGEF35 a numeric vector
ARHGEF37 a numeric vector
ARHGEF38 a numeric vector
ARHGEF39 a numeric vector
ARHGEF4 a numeric vector
ARHGEF40 a numeric vector
ARHGEF5 a numeric vector
ARHGEF6 a numeric vector

ARHGEF7 a numeric vector
ARHGEF9 a numeric vector
ARID1A a numeric vector
ARID1B a numeric vector
ARID2 a numeric vector
ARID3A a numeric vector
ARID3B a numeric vector
ARID3BP1 a numeric vector
ARID3C a numeric vector
ARID4A a numeric vector
ARID4B a numeric vector
ARID5A a numeric vector
ARID5B a numeric vector
ARIH1 a numeric vector
ARIH2 a numeric vector
ARL1 a numeric vector
ARL10 a numeric vector
ARL11 a numeric vector
ARL13A a numeric vector
ARL13B a numeric vector
ARL14 a numeric vector
ARL14EP a numeric vector
ARL14EPL a numeric vector
ARL15 a numeric vector
ARL16 a numeric vector
ARL17A a numeric vector
ARL17B a numeric vector
ARL2 a numeric vector
ARL2.SNX15 a numeric vector
ARL2BP a numeric vector
ARL3 a numeric vector
ARL4A a numeric vector
ARL4C a numeric vector
ARL4D a numeric vector
ARL5A a numeric vector
ARL5B a numeric vector
ARL5C a numeric vector

ARL6 a numeric vector
ARL6IP1 a numeric vector
ARL6IP4 a numeric vector
ARL6IP5 a numeric vector
ARL6IP6 a numeric vector
ARL8A a numeric vector
ARL8B a numeric vector
ARL9 a numeric vector
ARMC1 a numeric vector
ARMC10 a numeric vector
ARMC12 a numeric vector
ARMC2 a numeric vector
ARMC3 a numeric vector
ARMC4 a numeric vector
ARMC5 a numeric vector
ARMC6 a numeric vector
ARMC7 a numeric vector
ARMC8 a numeric vector
ARMC9 a numeric vector
ARMCX1 a numeric vector
ARMCX2 a numeric vector
ARMCX3 a numeric vector
ARMCX4 a numeric vector
ARMCX5 a numeric vector
ARMCX5.GPRASP2 a numeric vector
ARMCX6 a numeric vector
ARMH1 a numeric vector
ARMH2 a numeric vector
ARMH3 a numeric vector
ARMH4 a numeric vector
ARMS2 a numeric vector
ARMT1 a numeric vector
ARNT a numeric vector
ARNT2 a numeric vector
ARNTL a numeric vector
ARNTL2 a numeric vector
ARPC1A a numeric vector

ARPC1B a numeric vector
ARPC2 a numeric vector
ARPC3 a numeric vector
ARPC4 a numeric vector
ARPC4.TTLL3 a numeric vector
ARPC5 a numeric vector
ARPC5L a numeric vector
ARPIN a numeric vector
ARPIN.AP3S2 a numeric vector
ARPP19 a numeric vector
ARPP21 a numeric vector
ARR3 a numeric vector
ARRB1 a numeric vector
ARRB2 a numeric vector
ARRDC1 a numeric vector
ARRDC2 a numeric vector
ARRDC3 a numeric vector
ARRDC4 a numeric vector
ARRDC5 a numeric vector
ARSA a numeric vector
ARSB a numeric vector
ARSD a numeric vector
ARSF a numeric vector
ARSG a numeric vector
ARSH a numeric vector
ARSI a numeric vector
ARSJ a numeric vector
ARSK a numeric vector
ARSL a numeric vector
ART1 a numeric vector
ART3 a numeric vector
ART4 a numeric vector
ART5 a numeric vector
ARTN a numeric vector
ARV1 a numeric vector
ARVCF a numeric vector
ARX a numeric vector

AS3MT a numeric vector
ASAH1 a numeric vector
ASAH2 a numeric vector
ASAH2B a numeric vector
ASAP1 a numeric vector
ASAP2 a numeric vector
ASAP3 a numeric vector
ASB1 a numeric vector
ASB10 a numeric vector
ASB11 a numeric vector
ASB12 a numeric vector
ASB13 a numeric vector
ASB14 a numeric vector
ASB15 a numeric vector
ASB16 a numeric vector
ASB17 a numeric vector
ASB18 a numeric vector
ASB2 a numeric vector
ASB3 a numeric vector
ASB4 a numeric vector
ASB5 a numeric vector
ASB6 a numeric vector
ASB7 a numeric vector
ASB8 a numeric vector
ASB9 a numeric vector
ASCC1 a numeric vector
ASCC2 a numeric vector
ASCC3 a numeric vector
ASCL1 a numeric vector
ASCL2 a numeric vector
ASCL3 a numeric vector
ASCL4 a numeric vector
ASCL5 a numeric vector
ASDURF a numeric vector
ASF1A a numeric vector
ASF1B a numeric vector
ASGR1 a numeric vector

ASGR2 a numeric vector
ASH1L a numeric vector
ASH2L a numeric vector
ASIC1 a numeric vector
ASIC2 a numeric vector
ASIC3 a numeric vector
ASIC4 a numeric vector
ASIC5 a numeric vector
ASIP a numeric vector
ASL a numeric vector
ASMT a numeric vector
ASMTL a numeric vector
ASNS a numeric vector
ASNSD1 a numeric vector
ASPA a numeric vector
ASPDH a numeric vector
ASPG a numeric vector
ASPH a numeric vector
ASPHD1 a numeric vector
ASPHD2 a numeric vector
ASPM a numeric vector
ASPN a numeric vector
ASPRV1 a numeric vector
ASPSCR1 a numeric vector
ASRGL1 a numeric vector
ASS1 a numeric vector
ASTE1 a numeric vector
ASTL a numeric vector
ASTN1 a numeric vector
ASTN2 a numeric vector
ASXL1 a numeric vector
ASXL2 a numeric vector
ASXL3 a numeric vector
ASZ1 a numeric vector
ATAD1 a numeric vector
ATAD2 a numeric vector
ATAD2B a numeric vector

ATAD3A a numeric vector
ATAD3B a numeric vector
ATAD3C a numeric vector
ATAD5 a numeric vector
ATAT1 a numeric vector
ATCAY a numeric vector
ATE1 a numeric vector
ATF1 a numeric vector
ATF2 a numeric vector
ATF3 a numeric vector
ATF4 a numeric vector
ATF5 a numeric vector
ATF6 a numeric vector
ATF6B a numeric vector
ATF7 a numeric vector
ATF7.NPFF a numeric vector
ATF7IP a numeric vector
ATF7IP2 a numeric vector
ATG10 a numeric vector
ATG101 a numeric vector
ATG12 a numeric vector
ATG13 a numeric vector
ATG14 a numeric vector
ATG16L1 a numeric vector
ATG16L2 a numeric vector
ATG2A a numeric vector
ATG2B a numeric vector
ATG3 a numeric vector
ATG4A a numeric vector
ATG4B a numeric vector
ATG4C a numeric vector
ATG4D a numeric vector
ATG5 a numeric vector
ATG7 a numeric vector
ATG9A a numeric vector
ATG9B a numeric vector
ATIC a numeric vector

ATL1 a numeric vector
ATL2 a numeric vector
ATL3 a numeric vector
ATM a numeric vector
ATMIN a numeric vector
ATN1 a numeric vector
ATOH1 a numeric vector
ATOH7 a numeric vector
ATOH8 a numeric vector
ATOX1 a numeric vector
ATP10A a numeric vector
ATP10B a numeric vector
ATP10D a numeric vector
ATP11A a numeric vector
ATP11B a numeric vector
ATP11C a numeric vector
ATP12A a numeric vector
ATP13A1 a numeric vector
ATP13A2 a numeric vector
ATP13A3 a numeric vector
ATP13A4 a numeric vector
ATP13A5 a numeric vector
ATP1A1 a numeric vector
ATP1A2 a numeric vector
ATP1A3 a numeric vector
ATP1A4 a numeric vector
ATP1B1 a numeric vector
ATP1B2 a numeric vector
ATP1B3 a numeric vector
ATP1B4 a numeric vector
ATP23 a numeric vector
ATP2A1 a numeric vector
ATP2A2 a numeric vector
ATP2A3 a numeric vector
ATP2B1 a numeric vector
ATP2B2 a numeric vector
ATP2B3 a numeric vector

ATP2B4 a numeric vector
ATP2C1 a numeric vector
ATP2C2 a numeric vector
ATP4A a numeric vector
ATP4B a numeric vector
ATP5F1A a numeric vector
ATP5F1B a numeric vector
ATP5F1C a numeric vector
ATP5F1D a numeric vector
ATP5F1E a numeric vector
ATP5IF1 a numeric vector
ATP5MC1 a numeric vector
ATP5MC2 a numeric vector
ATP5MC3 a numeric vector
ATP5MD a numeric vector
ATP5ME a numeric vector
ATP5MF a numeric vector
ATP5MF.PTCD1 a numeric vector
ATP5MG a numeric vector
ATP5MGL a numeric vector
ATP5MPL a numeric vector
ATP5PB a numeric vector
ATP5PD a numeric vector
ATP5PF a numeric vector
ATP5PO a numeric vector
ATP6AP1 a numeric vector
ATP6AP1L a numeric vector
ATP6AP2 a numeric vector
ATP6V0A1 a numeric vector
ATP6V0A2 a numeric vector
ATP6V0A4 a numeric vector
ATP6V0B a numeric vector
ATP6V0C a numeric vector
ATP6V0D1 a numeric vector
ATP6V0D2 a numeric vector
ATP6V0E1 a numeric vector
ATP6V0E2 a numeric vector

ATP6V1A a numeric vector
ATP6V1B1 a numeric vector
ATP6V1B2 a numeric vector
ATP6V1C1 a numeric vector
ATP6V1C2 a numeric vector
ATP6V1D a numeric vector
ATP6V1E1 a numeric vector
ATP6V1E2 a numeric vector
ATP6V1F a numeric vector
ATP6V1FNB a numeric vector
ATP6V1G1 a numeric vector
ATP6V1G2 a numeric vector
ATP6V1G2.DDX39B a numeric vector
ATP6V1G3 a numeric vector
ATP6V1H a numeric vector
ATP7A a numeric vector
ATP7B a numeric vector
ATP8A1 a numeric vector
ATP8A2 a numeric vector
ATP8B1 a numeric vector
ATP8B2 a numeric vector
ATP8B3 a numeric vector
ATP8B4 a numeric vector
ATP9A a numeric vector
ATP9B a numeric vector
ATPAF1 a numeric vector
ATPAF2 a numeric vector
ATPSCKMT a numeric vector
ATR a numeric vector
ATRAID a numeric vector
ATRIP a numeric vector
ATRN a numeric vector
ATRNL1 a numeric vector
ATRX a numeric vector
ATXN1 a numeric vector
ATXN10 a numeric vector
ATXN1L a numeric vector

ATXN2 a numeric vector
ATXN2L a numeric vector
ATXN3 a numeric vector
ATXN3L a numeric vector
ATXN7 a numeric vector
ATXN7L1 a numeric vector
ATXN7L2 a numeric vector
ATXN7L3 a numeric vector
ATXN7L3B a numeric vector
AUH a numeric vector
AUNIP a numeric vector
AUP1 a numeric vector
AURKA a numeric vector
AURKAIP1 a numeric vector
AURKB a numeric vector
AURKC a numeric vector
AUTS2 a numeric vector
AVEN a numeric vector
AVIL a numeric vector
AVL9 a numeric vector
AVP a numeric vector
AVPI1 a numeric vector
AVPR1A a numeric vector
AVPR1B a numeric vector
AVPR2 a numeric vector
AWAT1 a numeric vector
AWAT2 a numeric vector
AXDND1 a numeric vector
AXIN1 a numeric vector
AXIN2 a numeric vector
AXL a numeric vector
AZGP1 a numeric vector
AZI2 a numeric vector
AZIN1 a numeric vector
AZIN2 a numeric vector
AZU1 a numeric vector
B2M a numeric vector

B3GALNT1 a numeric vector
B3GALNT2 a numeric vector
B3GALT1 a numeric vector
B3GALT2 a numeric vector
B3GALT4 a numeric vector
B3GALT5 a numeric vector
B3GALT6 a numeric vector
B3GAT1 a numeric vector
B3GAT2 a numeric vector
B3GAT3 a numeric vector
B3GLCT a numeric vector
B3GNT10 a numeric vector
B3GNT2 a numeric vector
B3GNT3 a numeric vector
B3GNT4 a numeric vector
B3GNT5 a numeric vector
B3GNT6 a numeric vector
B3GNT7 a numeric vector
B3GNT8 a numeric vector
B3GNT9 a numeric vector
B3GNTL1 a numeric vector
B4GALNT1 a numeric vector
B4GALNT2 a numeric vector
B4GALNT3 a numeric vector
B4GALNT4 a numeric vector
B4GALT1 a numeric vector
B4GALT2 a numeric vector
B4GALT3 a numeric vector
B4GALT4 a numeric vector
B4GALT5 a numeric vector
B4GALT6 a numeric vector
B4GALT7 a numeric vector
B4GAT1 a numeric vector
B9D1 a numeric vector
B9D2 a numeric vector
BAALC a numeric vector
BAAT a numeric vector

BABAM1 a numeric vector
BABAM2 a numeric vector
BACE1 a numeric vector
BACE2 a numeric vector
BACH1 a numeric vector
BACH2 a numeric vector
BAD a numeric vector
BAG1 a numeric vector
BAG2 a numeric vector
BAG3 a numeric vector
BAG4 a numeric vector
BAG5 a numeric vector
BAG6 a numeric vector
BAHCC1 a numeric vector
BAHD1 a numeric vector
BAIAP2 a numeric vector
BAIAP2L1 a numeric vector
BAIAP2L2 a numeric vector
BAIAP3 a numeric vector
BAK1 a numeric vector
BAMBI a numeric vector
BANF1 a numeric vector
BANF2 a numeric vector
BANK1 a numeric vector
BANP a numeric vector
BAP1 a numeric vector
BARD1 a numeric vector
BARHL1 a numeric vector
BARHL2 a numeric vector
BARX1 a numeric vector
BARX2 a numeric vector
BASP1 a numeric vector
BATF a numeric vector
BATF2 a numeric vector
BATF3 a numeric vector
BAX a numeric vector
BAZ1A a numeric vector
BAZ1B a numeric vector
BAZ2A a numeric vector

Details

This is train FPKM.

Value

A data frame with columns X and Y.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(train_FPKM)
## maybe str(train_FPKM)
```

Train_Norm_data	<i>Train Norm data</i>
-----------------	------------------------

Description

This is Train Norm data.

Usage

```
data("Train_Norm_data")
```

Format

A data frame with 158 observations on the following 2025 variables.

Age a numeric vector
 subtype a character vector
 gender a character vector
 race a character vector
 ajcc_pathologic_tumor_stage a logical vector
 histological_type a character vector
 histological_grade a character vector
 treatment_outcome_first_course a character vector
 radiation_treatment_adjuvant a character vector
 sample_type a character vector
 type a character vector
 OS a numeric vector
 OS.time a numeric vector

DSS a numeric vector
DSS.time a numeric vector
DFI a numeric vector
DFI.time a numeric vector
PFI a numeric vector
PFI.time a numeric vector
OS_month a numeric vector
A1BG a numeric vector
A1CF a numeric vector
A2M a numeric vector
A2ML1 a numeric vector
A3GALT2 a numeric vector
A4GALT a numeric vector
A4GNT a numeric vector
AAAS a numeric vector
AACS a numeric vector
AADAC a numeric vector
AADACL2 a numeric vector
AADACL3 a numeric vector
AADACL4 a numeric vector
AADAT a numeric vector
AAGAB a numeric vector
AAK1 a numeric vector
AAMDC a numeric vector
AAMP a numeric vector
AANAT a numeric vector
AAR2 a numeric vector
AARD a numeric vector
AARS1 a numeric vector
AARS2 a numeric vector
AARSD1 a numeric vector
AASDH a numeric vector
AASDHPPT a numeric vector
AASS a numeric vector
AATF a numeric vector
AATK a numeric vector
ABAT a numeric vector

ABCA1 a numeric vector
ABCA10 a numeric vector
ABCA12 a numeric vector
ABCA13 a numeric vector
ABCA2 a numeric vector
ABCA3 a numeric vector
ABCA4 a numeric vector
ABCA5 a numeric vector
ABCA6 a numeric vector
ABCA7 a numeric vector
ABCA8 a numeric vector
ABCA9 a numeric vector
ABCB1 a numeric vector
ABCB10 a numeric vector
ABCB11 a numeric vector
ABCB4 a numeric vector
ABCB5 a numeric vector
ABCB6 a numeric vector
ABCB7 a numeric vector
ABCB8 a numeric vector
ABCB9 a numeric vector
ABCC1 a numeric vector
ABCC10 a numeric vector
ABCC11 a numeric vector
ABCC12 a numeric vector
ABCC2 a numeric vector
ABCC3 a numeric vector
ABCC4 a numeric vector
ABCC5 a numeric vector
ABCC6 a numeric vector
ABCC8 a numeric vector
ABCC9 a numeric vector
ABCD1 a numeric vector
ABCD2 a numeric vector
ABCD3 a numeric vector
ABCD4 a numeric vector
ABCE1 a numeric vector

ABCF1 a numeric vector
ABCF2 a numeric vector
ABCF2.H2BE1 a numeric vector
ABCF3 a numeric vector
ABCG1 a numeric vector
ABCG2 a numeric vector
ABCG4 a numeric vector
ABCG5 a numeric vector
ABCG8 a numeric vector
ABHD1 a numeric vector
ABHD10 a numeric vector
ABHD11 a numeric vector
ABHD12 a numeric vector
ABHD12B a numeric vector
ABHD13 a numeric vector
ABHD14A a numeric vector
ABHD14A.ACY1 a numeric vector
ABHD14B a numeric vector
ABHD15 a numeric vector
ABHD16A a numeric vector
ABHD16B a numeric vector
ABHD17A a numeric vector
ABHD17B a numeric vector
ABHD17C a numeric vector
ABHD18 a numeric vector
ABHD2 a numeric vector
ABHD3 a numeric vector
ABHD4 a numeric vector
ABHD5 a numeric vector
ABHD6 a numeric vector
ABHD8 a numeric vector
ABI1 a numeric vector
ABI2 a numeric vector
ABI3 a numeric vector
ABI3BP a numeric vector
ABITRAM a numeric vector
ABL1 a numeric vector

ABL2 a numeric vector
ABLIM1 a numeric vector
ABLIM2 a numeric vector
ABLIM3 a numeric vector
ABO a numeric vector
ABR a numeric vector
ABRA a numeric vector
ABRACL a numeric vector
ABRAXAS1 a numeric vector
ABRAXAS2 a numeric vector
ABT1 a numeric vector
ABTB1 a numeric vector
ABTB2 a numeric vector
AC000093.1 a numeric vector
AC000120.2 a numeric vector
AC000120.3 a numeric vector
AC001226.2 a numeric vector
AC002094.3 a numeric vector
AC002310.4 a numeric vector
AC002456.2 a numeric vector
AC002985.1 a numeric vector
AC002996.1 a numeric vector
AC003002.1 a numeric vector
AC003002.2 a numeric vector
AC003002.3 a numeric vector
AC003005.1 a numeric vector
AC003006.1 a numeric vector
AC003688.1 a numeric vector
AC004076.1 a numeric vector
AC004080.3 a numeric vector
AC004223.3 a numeric vector
AC004233.4 a numeric vector
AC004593.2 a numeric vector
AC004687.2 a numeric vector
AC004691.2 a numeric vector
AC004706.3 a numeric vector
AC004805.1 a numeric vector

AC004832.3 a numeric vector
AC004922.1 a numeric vector
AC004997.1 a numeric vector
AC005020.2 a numeric vector
AC005041.1 a numeric vector
AC005154.5 a numeric vector
AC005192.1 a numeric vector
AC005258.1 a numeric vector
AC005324.2 a numeric vector
AC005324.3 a numeric vector
AC005520.1 a numeric vector
AC005551.1 a numeric vector
AC005670.2 a numeric vector
AC005697.1 a numeric vector
AC005702.1 a numeric vector
AC005726.1 a numeric vector
AC005832.4 a numeric vector
AC005833.1 a numeric vector
AC005837.2 a numeric vector
AC005943.1 a numeric vector
AC006030.1 a numeric vector
AC006059.2 a numeric vector
AC006064.6 a numeric vector
AC006254.1 a numeric vector
AC006486.1 a numeric vector
AC006486.3 a numeric vector
AC006538.2 a numeric vector
AC006978.2 a numeric vector
AC007040.2 a numeric vector
AC007192.1 a numeric vector
AC007326.4 a numeric vector
AC007375.2 a numeric vector
AC007731.4 a numeric vector
AC007846.2 a numeric vector
AC007906.2 a numeric vector
AC007998.2 a numeric vector
AC008012.1 a numeric vector

AC008073.3 a numeric vector
AC008162.2 a numeric vector
AC008397.1 a numeric vector
AC008397.2 a numeric vector
AC008403.1 a numeric vector
AC008481.3 a numeric vector
AC008537.1 a numeric vector
AC008575.1 a numeric vector
AC008581.2 a numeric vector
AC008676.3 a numeric vector
AC008687.1 a numeric vector
AC008687.4 a numeric vector
AC008687.8 a numeric vector
AC008695.1 a numeric vector
AC008750.7 a numeric vector
AC008758.1 a numeric vector
AC008758.5 a numeric vector
AC008758.6 a numeric vector
AC008763.2 a numeric vector
AC008763.3 a numeric vector
AC008763.4 a numeric vector
AC008764.1 a numeric vector
AC008764.4 a numeric vector
AC008770.1 a numeric vector
AC008770.2 a numeric vector
AC008770.4 a numeric vector
AC008878.1 a numeric vector
AC008878.2 a numeric vector
AC008878.3 a numeric vector
AC008982.1 a numeric vector
AC009070.1 a numeric vector
AC009133.6 a numeric vector
AC009163.3 a numeric vector
AC009163.5 a numeric vector
AC009412.1 a numeric vector
AC009690.1 a numeric vector
AC009690.3 a numeric vector

AC009779.3 a numeric vector
AC009879.2 a numeric vector
AC009879.3 a numeric vector
AC010132.3 a numeric vector
AC010197.2 a numeric vector
AC010255.2 a numeric vector
AC010319.2 a numeric vector
AC010323.1 a numeric vector
AC010325.1 a numeric vector
AC010326.2 a numeric vector
AC010327.2 a numeric vector
AC010422.3 a numeric vector
AC010422.5 a numeric vector
AC010422.6 a numeric vector
AC010422.8 a numeric vector
AC010463.1 a numeric vector
AC010522.1 a numeric vector
AC010531.1 a numeric vector
AC010542.3 a numeric vector
AC010547.4 a numeric vector
AC010615.4 a numeric vector
AC010616.1 a numeric vector
AC010619.1 a numeric vector
AC010646.1 a numeric vector
AC010973.3 a numeric vector
AC010980.1 a numeric vector
AC011005.1 a numeric vector
AC011330.3 a numeric vector
AC011448.1 a numeric vector
AC011452.1 a numeric vector
AC011455.2 a numeric vector
AC011462.1 a numeric vector
AC011473.4 a numeric vector
AC011479.1 a numeric vector
AC011498.4 a numeric vector
AC011499.1 a numeric vector
AC011511.1 a numeric vector

AC011511.4 a numeric vector
AC011530.1 a numeric vector
AC012184.2 a numeric vector
AC012213.5 a numeric vector
AC012254.2 a numeric vector
AC012309.1 a numeric vector
AC012488.2 a numeric vector
AC012531.3 a numeric vector
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AMZ1 a numeric vector

AMZ2 a numeric vector
ANAPC1 a numeric vector
ANAPC10 a numeric vector
ANAPC11 a numeric vector
ANAPC13 a numeric vector
ANAPC15 a numeric vector
ANAPC16 a numeric vector
ANAPC2 a numeric vector
ANAPC4 a numeric vector
ANAPC5 a numeric vector
ANAPC7 a numeric vector
ANG a numeric vector
ANGEL1 a numeric vector
ANGEL2 a numeric vector
ANGPT1 a numeric vector
ANGPT2 a numeric vector
ANGPT4 a numeric vector
ANGPTL1 a numeric vector
ANGPTL2 a numeric vector
ANGPTL3 a numeric vector
ANGPTL4 a numeric vector
ANGPTL5 a numeric vector
ANGPTL6 a numeric vector
ANGPTL7 a numeric vector
ANGPTL8 a numeric vector
ANHx a numeric vector
ANK1 a numeric vector
ANK2 a numeric vector
ANK3 a numeric vector
ANKAR a numeric vector
ANKDD1A a numeric vector
ANKDD1B a numeric vector
ANKEF1 a numeric vector
ANKFN1 a numeric vector
ANKFY1 a numeric vector
ANKH a numeric vector
ANKHD1 a numeric vector

ANKHD1.EIF4EBP3 a numeric vector
ANKIB1 a numeric vector
ANKK1 a numeric vector
ANKLE1 a numeric vector
ANKLE2 a numeric vector
ANKMY1 a numeric vector
ANKMY2 a numeric vector
ANKRA2 a numeric vector
ANKRD1 a numeric vector
ANKRD10 a numeric vector
ANKRD11 a numeric vector
ANKRD12 a numeric vector
ANKRD13A a numeric vector
ANKRD13B a numeric vector
ANKRD13C a numeric vector
ANKRD13D a numeric vector
ANKRD16 a numeric vector
ANKRD17 a numeric vector
ANKRD18A a numeric vector
ANKRD18B a numeric vector
ANKRD2 a numeric vector
ANKRD20A1 a numeric vector
ANKRD20A2P a numeric vector
ANKRD20A3P a numeric vector
ANKRD20A4P a numeric vector
ANKRD22 a numeric vector
ANKRD23 a numeric vector
ANKRD24 a numeric vector
ANKRD26 a numeric vector
ANKRD27 a numeric vector
ANKRD28 a numeric vector
ANKRD29 a numeric vector
ANKRD30A a numeric vector
ANKRD30B a numeric vector
ANKRD30BL a numeric vector
ANKRD31 a numeric vector
ANKRD33 a numeric vector

ANKRD33B a numeric vector
ANKRD34A a numeric vector
ANKRD34B a numeric vector
ANKRD34C a numeric vector
ANKRD35 a numeric vector
ANKRD36 a numeric vector
ANKRD36B a numeric vector
ANKRD36C a numeric vector
ANKRD37 a numeric vector
ANKRD39 a numeric vector
ANKRD40 a numeric vector
ANKRD40CL a numeric vector
ANKRD42 a numeric vector
ANKRD44 a numeric vector
ANKRD45 a numeric vector
ANKRD46 a numeric vector
ANKRD49 a numeric vector
ANKRD50 a numeric vector
ANKRD52 a numeric vector
ANKRD53 a numeric vector
ANKRD54 a numeric vector
ANKRD55 a numeric vector
ANKRD6 a numeric vector
ANKRD60 a numeric vector
ANKRD61 a numeric vector
ANKRD62 a numeric vector
ANKRD63 a numeric vector
ANKRD65 a numeric vector
ANKRD66 a numeric vector
ANKRD7 a numeric vector
ANKRD9 a numeric vector
ANKS1A a numeric vector
ANKS1B a numeric vector
ANKS3 a numeric vector
ANKS4B a numeric vector
ANKS6 a numeric vector
ANKUB1 a numeric vector

ANKZF1 a numeric vector
ANLN a numeric vector
AN01 a numeric vector
AN010 a numeric vector
AN02 a numeric vector
AN03 a numeric vector
AN04 a numeric vector
AN05 a numeric vector
AN06 a numeric vector
AN07 a numeric vector
AN08 a numeric vector
AN09 a numeric vector
ANOS1 a numeric vector
ANP32A a numeric vector
ANP32B a numeric vector
ANP32D a numeric vector
ANP32E a numeric vector
ANPEP a numeric vector
ANTKMT a numeric vector
ANTXR1 a numeric vector
ANTXR2 a numeric vector
ANTXRL a numeric vector
ANXA1 a numeric vector
ANXA10 a numeric vector
ANXA11 a numeric vector
ANXA13 a numeric vector
ANXA2 a numeric vector
ANXA2R a numeric vector
ANXA3 a numeric vector
ANXA4 a numeric vector
ANXA5 a numeric vector
ANXA6 a numeric vector
ANXA7 a numeric vector
ANXA8 a numeric vector
ANXA8L1 a numeric vector
ANXA9 a numeric vector
AOAH a numeric vector

AOC1 a numeric vector
AOC2 a numeric vector
AOC3 a numeric vector
AOPEP a numeric vector
AOX1 a numeric vector
AP000295.1 a numeric vector
AP000311.1 a numeric vector
AP000350.4 a numeric vector
AP000356.5 a numeric vector
AP000471.1 a numeric vector
AP000721.1 a numeric vector
AP000781.2 a numeric vector
AP000812.3 a numeric vector
AP000812.4 a numeric vector
AP000944.5 a numeric vector
AP001054.1 a numeric vector
AP001267.5 a numeric vector
AP001273.2 a numeric vector
AP001453.3 a numeric vector
AP001458.2 a numeric vector
AP001781.2 a numeric vector
AP001931.1 a numeric vector
AP001931.2 a numeric vector
AP002373.1 a numeric vector
AP002495.1 a numeric vector
AP002512.3 a numeric vector
AP002748.5 a numeric vector
AP002884.2 a numeric vector
AP002990.1 a numeric vector
AP003071.5 a numeric vector
AP003108.2 a numeric vector
AP003419.1 a numeric vector
AP006621.6 a numeric vector
AP1AR a numeric vector
AP1B1 a numeric vector
AP1G1 a numeric vector
AP1G2 a numeric vector

AP1M1 a numeric vector
AP1M2 a numeric vector
AP1S1 a numeric vector
AP1S2 a numeric vector
AP1S3 a numeric vector
AP2A1 a numeric vector
AP2A2 a numeric vector
AP2B1 a numeric vector
AP2M1 a numeric vector
AP2S1 a numeric vector
AP3B1 a numeric vector
AP3B2 a numeric vector
AP3D1 a numeric vector
AP3M1 a numeric vector
AP3M2 a numeric vector
AP3S1 a numeric vector
AP3S2 a numeric vector
AP4B1 a numeric vector
AP4E1 a numeric vector
AP4M1 a numeric vector
AP4S1 a numeric vector
AP5B1 a numeric vector
AP5M1 a numeric vector
AP5S1 a numeric vector
AP5Z1 a numeric vector
APAF1 a numeric vector
APBA1 a numeric vector
APBA2 a numeric vector
APBA3 a numeric vector
APBB1 a numeric vector
APBB1IP a numeric vector
APBB2 a numeric vector
APBB3 a numeric vector
APC a numeric vector
APC2 a numeric vector
APCDD1 a numeric vector
APCDD1L a numeric vector

APCS a numeric vector
APEH a numeric vector
APELA a numeric vector
APEX1 a numeric vector
APEX2 a numeric vector
APH1A a numeric vector
APH1B a numeric vector
API5 a numeric vector
APIP a numeric vector
APLF a numeric vector
APLN a numeric vector
APLNR a numeric vector
APLP1 a numeric vector
APLP2 a numeric vector
APMAP a numeric vector
APOA1 a numeric vector
APOA2 a numeric vector
APOA4 a numeric vector
APOA5 a numeric vector
APOB a numeric vector
APOBEC1 a numeric vector
APOBEC2 a numeric vector
APOBEC3A a numeric vector
APOBEC3B a numeric vector
APOBEC3C a numeric vector
APOBEC3D a numeric vector
APOBEC3F a numeric vector
APOBEC3G a numeric vector
APOBEC3H a numeric vector
APOBEC4 a numeric vector
APOBR a numeric vector
APOC1 a numeric vector
APOC2 a numeric vector
APOC3 a numeric vector
APOC4 a numeric vector
APOC4.APOC2 a numeric vector
APOD a numeric vector

APOE a numeric vector
APOF a numeric vector
APOH a numeric vector
APOL1 a numeric vector
APOL2 a numeric vector
APOL3 a numeric vector
APOL4 a numeric vector
APOL5 a numeric vector
APOL6 a numeric vector
APOLD1 a numeric vector
APOM a numeric vector
APOO a numeric vector
APOOL a numeric vector
APP a numeric vector
APPBP2 a numeric vector
APPL1 a numeric vector
APPL2 a numeric vector
APRT a numeric vector
APTX a numeric vector
AQP1 a numeric vector
AQP10 a numeric vector
AQP11 a numeric vector
AQP12A a numeric vector
AQP12B a numeric vector
AQP2 a numeric vector
AQP3 a numeric vector
AQP4 a numeric vector
AQP5 a numeric vector
AQP6 a numeric vector
AQP7 a numeric vector
AQP8 a numeric vector
AQP9 a numeric vector
AQR a numeric vector
AR a numeric vector
ARAF a numeric vector
ARAP1 a numeric vector
ARAP2 a numeric vector

ARAP3 a numeric vector
ARC a numeric vector
ARCN1 a numeric vector
AREG a numeric vector
AREL1 a numeric vector
ARF1 a numeric vector
ARF3 a numeric vector
ARF4 a numeric vector
ARF5 a numeric vector
ARF6 a numeric vector
ARFGAP1 a numeric vector
ARFGAP2 a numeric vector
ARFGAP3 a numeric vector
ARFGEF1 a numeric vector
ARFGEF2 a numeric vector
ARFGEF3 a numeric vector
ARFIP1 a numeric vector
ARFIP2 a numeric vector
ARFRP1 a numeric vector
ARG1 a numeric vector
ARG2 a numeric vector
ARGFX a numeric vector
ARGLU1 a numeric vector
ARHGAP1 a numeric vector
ARHGAP10 a numeric vector
ARHGAP11A a numeric vector
ARHGAP11B a numeric vector
ARHGAP12 a numeric vector
ARHGAP15 a numeric vector
ARHGAP17 a numeric vector
ARHGAP18 a numeric vector
ARHGAP19 a numeric vector
ARHGAP19.SLIT1 a numeric vector
ARHGAP20 a numeric vector
ARHGAP21 a numeric vector
ARHGAP22 a numeric vector
ARHGAP23 a numeric vector

ARHGAP24 a numeric vector
ARHGAP25 a numeric vector
ARHGAP26 a numeric vector
ARHGAP27 a numeric vector
ARHGAP28 a numeric vector
ARHGAP29 a numeric vector
ARHGAP30 a numeric vector
ARHGAP31 a numeric vector
ARHGAP32 a numeric vector
ARHGAP33 a numeric vector
ARHGAP35 a numeric vector
ARHGAP36 a numeric vector
ARHGAP39 a numeric vector
ARHGAP4 a numeric vector
ARHGAP40 a numeric vector
ARHGAP42 a numeric vector
ARHGAP44 a numeric vector
ARHGAP45 a numeric vector
ARHGAP5 a numeric vector
ARHGAP6 a numeric vector
ARHGAP8 a numeric vector
ARHGAP9 a numeric vector
ARHGDIA a numeric vector
ARHGDIB a numeric vector
ARHGDIG a numeric vector
ARHGEF1 a numeric vector
ARHGEF10 a numeric vector
ARHGEF10L a numeric vector
ARHGEF11 a numeric vector
ARHGEF12 a numeric vector
ARHGEF15 a numeric vector
ARHGEF16 a numeric vector
ARHGEF17 a numeric vector
ARHGEF18 a numeric vector
ARHGEF19 a numeric vector
ARHGEF2 a numeric vector
ARHGEF25 a numeric vector

ARHGEF26 a numeric vector
ARHGEF28 a numeric vector
ARHGEF3 a numeric vector
ARHGEF33 a numeric vector
ARHGEF35 a numeric vector
ARHGEF37 a numeric vector
ARHGEF38 a numeric vector
ARHGEF39 a numeric vector
ARHGEF4 a numeric vector
ARHGEF40 a numeric vector
ARHGEF5 a numeric vector
ARHGEF6 a numeric vector
ARHGEF7 a numeric vector
ARHGEF9 a numeric vector
ARID1A a numeric vector
ARID1B a numeric vector
ARID2 a numeric vector
ARID3A a numeric vector
ARID3B a numeric vector
ARID3BP1 a numeric vector
ARID3C a numeric vector
ARID4A a numeric vector
ARID4B a numeric vector
ARID5A a numeric vector
ARID5B a numeric vector
ARIH1 a numeric vector
ARIH2 a numeric vector
ARL1 a numeric vector
ARL10 a numeric vector
ARL11 a numeric vector
ARL13A a numeric vector
ARL13B a numeric vector
ARL14 a numeric vector
ARL14EP a numeric vector
ARL14EPL a numeric vector
ARL15 a numeric vector
ARL16 a numeric vector

ARL17A a numeric vector
ARL17B a numeric vector
ARL2 a numeric vector
ARL2.SNX15 a numeric vector
ARL2BP a numeric vector
ARL3 a numeric vector
ARL4A a numeric vector
ARL4C a numeric vector
ARL4D a numeric vector
ARL5A a numeric vector
ARL5B a numeric vector
ARL5C a numeric vector
ARL6 a numeric vector
ARL6IP1 a numeric vector
ARL6IP4 a numeric vector
ARL6IP5 a numeric vector
ARL6IP6 a numeric vector
ARL8A a numeric vector
ARL8B a numeric vector
ARL9 a numeric vector
ARMC1 a numeric vector
ARMC10 a numeric vector
ARMC12 a numeric vector
ARMC2 a numeric vector
ARMC3 a numeric vector
ARMC4 a numeric vector
ARMC5 a numeric vector
ARMC6 a numeric vector
ARMC7 a numeric vector
ARMC8 a numeric vector
ARMC9 a numeric vector
ARMCX1 a numeric vector
ARMCX2 a numeric vector
ARMCX3 a numeric vector
ARMCX4 a numeric vector
ARMCX5 a numeric vector
ARMCX5.GPRASP2 a numeric vector

ARMCX6 a numeric vector
ARMH1 a numeric vector
ARMH2 a numeric vector
ARMH3 a numeric vector
ARMH4 a numeric vector
ARMS2 a numeric vector
ARMT1 a numeric vector
ARNT a numeric vector
ARNT2 a numeric vector
ARNTL a numeric vector
ARNTL2 a numeric vector
ARPC1A a numeric vector
ARPC1B a numeric vector
ARPC2 a numeric vector
ARPC3 a numeric vector
ARPC4 a numeric vector
ARPC4.TTLL3 a numeric vector
ARPC5 a numeric vector
ARPC5L a numeric vector
ARPIN a numeric vector
ARPIN.AP3S2 a numeric vector
ARPP19 a numeric vector
ARPP21 a numeric vector
ARR3 a numeric vector
ARRB1 a numeric vector
ARRB2 a numeric vector
ARRDC1 a numeric vector
ARRDC2 a numeric vector
ARRDC3 a numeric vector
ARRDC4 a numeric vector
ARRDC5 a numeric vector
ARSA a numeric vector
ARSB a numeric vector
ARSD a numeric vector
ARSF a numeric vector
ARSG a numeric vector
ARSH a numeric vector

ARSI a numeric vector
ARSJ a numeric vector
ARSK a numeric vector
ARSL a numeric vector
ART1 a numeric vector
ART3 a numeric vector
ART4 a numeric vector
ART5 a numeric vector
ARTN a numeric vector
ARV1 a numeric vector
ARVCF a numeric vector
ARX a numeric vector
AS3MT a numeric vector
ASAH1 a numeric vector
ASAH2 a numeric vector
ASAH2B a numeric vector
ASAP1 a numeric vector
ASAP2 a numeric vector
ASAP3 a numeric vector
ASB1 a numeric vector
ASB10 a numeric vector
ASB11 a numeric vector
ASB12 a numeric vector
ASB13 a numeric vector
ASB14 a numeric vector
ASB15 a numeric vector
ASB16 a numeric vector
ASB17 a numeric vector
ASB18 a numeric vector
ASB2 a numeric vector
ASB3 a numeric vector
ASB4 a numeric vector
ASB5 a numeric vector
ASB6 a numeric vector
ASB7 a numeric vector
ASB8 a numeric vector
ASB9 a numeric vector

ASCC1 a numeric vector
ASCC2 a numeric vector
ASCC3 a numeric vector
ASCL1 a numeric vector
ASCL2 a numeric vector
ASCL3 a numeric vector
ASCL4 a numeric vector
ASCL5 a numeric vector
ASDURF a numeric vector
ASF1A a numeric vector
ASF1B a numeric vector
ASGR1 a numeric vector
ASGR2 a numeric vector
ASH1L a numeric vector
ASH2L a numeric vector
ASIC1 a numeric vector
ASIC2 a numeric vector
ASIC3 a numeric vector
ASIC4 a numeric vector
ASIC5 a numeric vector
ASIP a numeric vector
ASL a numeric vector
ASMT a numeric vector
ASMTL a numeric vector
ASNS a numeric vector
ASNSD1 a numeric vector
ASPA a numeric vector
ASPDH a numeric vector
ASPG a numeric vector
ASPH a numeric vector
ASPHD1 a numeric vector
ASPHD2 a numeric vector
ASPM a numeric vector
ASPN a numeric vector
ASPRV1 a numeric vector
ASPSCR1 a numeric vector
ASRGL1 a numeric vector

ASS1 a numeric vector
ASTE1 a numeric vector
ASTL a numeric vector
ASTN1 a numeric vector
ASTN2 a numeric vector
ASXL1 a numeric vector
ASXL2 a numeric vector
ASXL3 a numeric vector
ASZ1 a numeric vector
ATAD1 a numeric vector
ATAD2 a numeric vector
ATAD2B a numeric vector
ATAD3A a numeric vector
ATAD3B a numeric vector
ATAD3C a numeric vector
ATAD5 a numeric vector
ATAT1 a numeric vector
ATCAY a numeric vector
ATE1 a numeric vector
ATF1 a numeric vector
ATF2 a numeric vector
ATF3 a numeric vector
ATF4 a numeric vector
ATF5 a numeric vector
ATF6 a numeric vector
ATF6B a numeric vector
ATF7 a numeric vector
ATF7.NPFF a numeric vector
ATF7IP a numeric vector
ATF7IP2 a numeric vector
ATG10 a numeric vector
ATG101 a numeric vector
ATG12 a numeric vector
ATG13 a numeric vector
ATG14 a numeric vector
ATG16L1 a numeric vector
ATG16L2 a numeric vector

ATG2A a numeric vector
ATG2B a numeric vector
ATG3 a numeric vector
ATG4A a numeric vector
ATG4B a numeric vector
ATG4C a numeric vector
ATG4D a numeric vector
ATG5 a numeric vector
ATG7 a numeric vector
ATG9A a numeric vector
ATG9B a numeric vector
ATIC a numeric vector
ATL1 a numeric vector
ATL2 a numeric vector
ATL3 a numeric vector
ATM a numeric vector
ATMIN a numeric vector
ATN1 a numeric vector
ATOH1 a numeric vector
ATOH7 a numeric vector
ATOH8 a numeric vector
ATOX1 a numeric vector
ATP10A a numeric vector
ATP10B a numeric vector
ATP10D a numeric vector
ATP11A a numeric vector
ATP11B a numeric vector
ATP11C a numeric vector
ATP12A a numeric vector
ATP13A1 a numeric vector
ATP13A2 a numeric vector
ATP13A3 a numeric vector
ATP13A4 a numeric vector
ATP13A5 a numeric vector
ATP1A1 a numeric vector
ATP1A2 a numeric vector
ATP1A3 a numeric vector

ATP1A4 a numeric vector
ATP1B1 a numeric vector
ATP1B2 a numeric vector
ATP1B3 a numeric vector
ATP1B4 a numeric vector
ATP23 a numeric vector
ATP2A1 a numeric vector
ATP2A2 a numeric vector
ATP2A3 a numeric vector
ATP2B1 a numeric vector
ATP2B2 a numeric vector
ATP2B3 a numeric vector
ATP2B4 a numeric vector
ATP2C1 a numeric vector
ATP2C2 a numeric vector
ATP4A a numeric vector
ATP4B a numeric vector
ATP5F1A a numeric vector
ATP5F1B a numeric vector
ATP5F1C a numeric vector
ATP5F1D a numeric vector
ATP5F1E a numeric vector
ATP5IF1 a numeric vector
ATP5MC1 a numeric vector
ATP5MC2 a numeric vector
ATP5MC3 a numeric vector
ATP5MD a numeric vector
ATP5ME a numeric vector
ATP5MF a numeric vector
ATP5MF.PTCD1 a numeric vector
ATP5MG a numeric vector
ATP5MGL a numeric vector
ATP5MPL a numeric vector
ATP5PB a numeric vector
ATP5PD a numeric vector
ATP5PF a numeric vector
ATP5PO a numeric vector

ATP6AP1 a numeric vector
ATP6AP1L a numeric vector
ATP6AP2 a numeric vector
ATP6V0A1 a numeric vector
ATP6V0A2 a numeric vector
ATP6V0A4 a numeric vector
ATP6V0B a numeric vector
ATP6V0C a numeric vector
ATP6V0D1 a numeric vector
ATP6V0D2 a numeric vector
ATP6V0E1 a numeric vector
ATP6V0E2 a numeric vector
ATP6V1A a numeric vector
ATP6V1B1 a numeric vector
ATP6V1B2 a numeric vector
ATP6V1C1 a numeric vector
ATP6V1C2 a numeric vector
ATP6V1D a numeric vector
ATP6V1E1 a numeric vector
ATP6V1E2 a numeric vector
ATP6V1F a numeric vector
ATP6V1FNB a numeric vector
ATP6V1G1 a numeric vector
ATP6V1G2 a numeric vector
ATP6V1G2.DDX39B a numeric vector
ATP6V1G3 a numeric vector
ATP6V1H a numeric vector
ATP7A a numeric vector
ATP7B a numeric vector
ATP8A1 a numeric vector
ATP8A2 a numeric vector
ATP8B1 a numeric vector
ATP8B2 a numeric vector
ATP8B3 a numeric vector
ATP8B4 a numeric vector
ATP9A a numeric vector
ATP9B a numeric vector

ATPAF1 a numeric vector
ATPAF2 a numeric vector
ATPSCKMT a numeric vector
ATR a numeric vector
ATRAID a numeric vector
ATRIP a numeric vector
ATRN a numeric vector
ATRNL1 a numeric vector
ATRX a numeric vector
ATXN1 a numeric vector
ATXN10 a numeric vector
ATXN1L a numeric vector
ATXN2 a numeric vector
ATXN2L a numeric vector
ATXN3 a numeric vector
ATXN3L a numeric vector
ATXN7 a numeric vector
ATXN7L1 a numeric vector
ATXN7L2 a numeric vector
ATXN7L3 a numeric vector
ATXN7L3B a numeric vector
AUH a numeric vector
AUNIP a numeric vector
AUP1 a numeric vector
AURKA a numeric vector
AURKAIP1 a numeric vector
AURKB a numeric vector
AURKC a numeric vector
AUTS2 a numeric vector
AVEN a numeric vector
AVIL a numeric vector
AVL9 a numeric vector
AVP a numeric vector
AVPI1 a numeric vector
AVPR1A a numeric vector
AVPR1B a numeric vector
AVPR2 a numeric vector

AWAT1 a numeric vector
AWAT2 a numeric vector
AXDND1 a numeric vector
AXIN1 a numeric vector
AXIN2 a numeric vector
AXL a numeric vector
AZGP1 a numeric vector
AZI2 a numeric vector
AZIN1 a numeric vector
AZIN2 a numeric vector
AZU1 a numeric vector
B2M a numeric vector
B3GALNT1 a numeric vector
B3GALNT2 a numeric vector
B3GALT1 a numeric vector
B3GALT2 a numeric vector
B3GALT4 a numeric vector
B3GALT5 a numeric vector
B3GALT6 a numeric vector
B3GAT1 a numeric vector
B3GAT2 a numeric vector
B3GAT3 a numeric vector
B3GLCT a numeric vector
B3GNT10 a numeric vector
B3GNT2 a numeric vector
B3GNT3 a numeric vector
B3GNT4 a numeric vector
B3GNT5 a numeric vector
B3GNT6 a numeric vector
B3GNT7 a numeric vector
B3GNT8 a numeric vector
B3GNT9 a numeric vector
B3GNTL1 a numeric vector
B4GALNT1 a numeric vector
B4GALNT2 a numeric vector
B4GALNT3 a numeric vector
B4GALNT4 a numeric vector

B4GALT1 a numeric vector
B4GALT2 a numeric vector
B4GALT3 a numeric vector
B4GALT4 a numeric vector
B4GALT5 a numeric vector
B4GALT6 a numeric vector
B4GALT7 a numeric vector
B4GAT1 a numeric vector
B9D1 a numeric vector
B9D2 a numeric vector
BAALC a numeric vector
BAAT a numeric vector
BABAM1 a numeric vector
BABAM2 a numeric vector
BACE1 a numeric vector
BACE2 a numeric vector
BACH1 a numeric vector
BACH2 a numeric vector
BAD a numeric vector
BAG1 a numeric vector
BAG2 a numeric vector
BAG3 a numeric vector
BAG4 a numeric vector
BAG5 a numeric vector
BAG6 a numeric vector
BAHCC1 a numeric vector
BAHD1 a numeric vector
BAIAP2 a numeric vector
BAIAP2L1 a numeric vector
BAIAP2L2 a numeric vector
BAIAP3 a numeric vector
BAK1 a numeric vector
BAMBI a numeric vector
BANF1 a numeric vector
BANF2 a numeric vector
BANK1 a numeric vector
BANP a numeric vector

BAP1 a numeric vector
BARD1 a numeric vector
BARHL1 a numeric vector
BARHL2 a numeric vector
BARX1 a numeric vector
BARX2 a numeric vector
BASP1 a numeric vector
BATF a numeric vector
BATF2 a numeric vector
BATF3 a numeric vector
BAX a numeric vector
BAZ1A a numeric vector
BAZ1B a numeric vector
BAZ2A a numeric vector

Details

This is Train Norm data.

Value

A data frame with columns X and Y.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(Train_Norm_data)
## maybe str(Train_Norm_data)
## plot(Train_Norm_data)
```

Train_PI_data

Train PI data

Description

This is Train PI data.

Usage

```
data("Train_PI_data")
```

Format

A data frame with 158 observations on the following 57 variables.

OS a numeric vector
OS_month a numeric vector
AADACL4 a numeric vector
ABCA12 a numeric vector
ABCC3 a numeric vector
ABI1 a numeric vector
ABRA a numeric vector
AC006059.2 a numeric vector
AC008676.3 a numeric vector
AC008764.4 a numeric vector
AC010132.3 a numeric vector
AC012651.1 a numeric vector
AC013477.1 a numeric vector
AC109583.1 a numeric vector
AC113348.2 a numeric vector
AC117457.1 a numeric vector
AC131160.1 a numeric vector
AC144573.1 a numeric vector
AC235565.2 a numeric vector
AC02 a numeric vector
ACTC1 a numeric vector
ACTL9 a numeric vector
ACTRT2 a numeric vector
ADD3 a numeric vector
ADGRL3 a numeric vector
ADH7 a numeric vector
ADPRHL1 a numeric vector
ADRA2A a numeric vector
ADRA2B a numeric vector
AFMID a numeric vector
AKAP12 a numeric vector
AKAP14 a numeric vector
AKAP3 a numeric vector
AL139260.3 a numeric vector
ALG6 a numeric vector

ANGPTL6 a numeric vector
ANKRD20A1 a numeric vector
ANXA6 a numeric vector
ANXA8L1 a numeric vector
AOC2 a numeric vector
APOBEC1 a numeric vector
APOE a numeric vector
ARHGAP11B a numeric vector
ARHGAP12 a numeric vector
ARHGEF19 a numeric vector
ARL2.SNX15 a numeric vector
ARL6IP1 a numeric vector
ARPC4.TTL3 a numeric vector
ASB4 a numeric vector
ASB5 a numeric vector
ASB6 a numeric vector
ASPM a numeric vector
ATP1A2 a numeric vector
ATP2B4 a numeric vector
AZGP1 a numeric vector
B3GAT2 a numeric vector
PI a numeric vector

Details

This is Train PI data.

Value

A data frame with columns X and Y.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(Train_PI_data)
## maybe str(Train_PI_data)
## plot(Train_PI_data)
```

Train_results

Training Results for Survival Prediction

Description

A data frame containing survival prediction results for training samples. The data includes actual risk group labels, predicted risk groups, probabilities for each class, and overall survival data.

Usage

```
data(Train_results)
```

Format

A data frame with 158 observations and 8 variables:

Sample_ID Character vector with the unique sample identifier (e.g., "TCGA-E1-5318-01").

Actual Factor indicating the actual risk group: "High_Risk" or "Low_Risk".

Predicted_Risk_Group Factor indicating the predicted risk group: "High_Risk" or "Low_Risk".

High_Risk_Prob Numeric value representing the probability of the sample being classified as High Risk.

Low_Risk_Prob Numeric value representing the probability of the sample being classified as Low Risk.

Prediction_Prob Numeric value representing the maximum class probability (confidence in prediction).

OS_month Integer representing the overall survival time in months.

OS_event Integer indicating the survival event: 1 = death, 0 = censored.

Source

The data was derived from TCGA (The Cancer Genome Atlas) using survival prediction models.

train_test_normalization_f

Train-Test Data Normalization Function

Description

This function performs normalization on training and test datasets, which include clinical data and gene expression values. The function applies log transformation and quantile normalization to the gene expression values.

Usage

```
train_test_normalization_f(train_data, test_data, col_num)
```

Arguments

<code>train_data</code>	A data frame containing the training dataset. The first columns represent clinical data, and the rest represent gene expression data.
<code>test_data</code>	A data frame containing the test dataset. The structure is the same as <code>train_data</code> .
<code>col_num</code>	An integer specifying the starting column index of the gene expression data in the datasets.

Details

The function performs the following steps:

1. Splits clinical and gene expression data based on `col_num`.
2. Applies \log_2 transformation to the gene expression data.
3. Performs quantile normalization on the log-transformed data for both training and test datasets.
4. Combines the clinical data with the normalized gene expression data.

Value

A list containing four data frames:

Train_Clin A data frame containing the clinical data from the training dataset.

Test_Clin A data frame containing the clinical data from the test dataset.

Train_Norm_data A data frame containing the combined clinical and normalized gene expression data for the training set.

Test_Norm_data A data frame containing the combined clinical and normalized gene expression data for the test set.

Examples

```
# Example datasets
train_data <- data.frame(matrix(rnorm(100), nrow = 10))
test_data <- data.frame(matrix(rnorm(100), nrow = 10))
col_num <- 5
result <- train_test_normalization_f(train_data, test_data, col_num)
str(result$Train_Norm_data)
str(result$Test_Norm_data)
```

Train_Uni_sig_data	<i>Train Uni sig data</i>
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Description

This is Train Uni sig data.

Usage

```
data("Train_Uni_sig_data")
```

Format

A data frame with 158 observations on the following 209 variables.

A2ML1 a numeric vector
AADACL4 a numeric vector
AAMDC a numeric vector
AAR2 a numeric vector
ABCA12 a numeric vector
ABCB4 a numeric vector
ABCB5 a numeric vector
ABCB6 a numeric vector
ABCC3 a numeric vector
ABCC9 a numeric vector
ABCE1 a numeric vector
ABCF3 a numeric vector
ABHD12 a numeric vector
ABHD14B a numeric vector
ABLIM1 a numeric vector
ABLIM3 a numeric vector
ABT1 a numeric vector
AC004076.1 a numeric vector
AC005520.1 a numeric vector
AC005832.4 a numeric vector
AC006030.1 a numeric vector
AC008764.4 a numeric vector
AC010132.3 a numeric vector
AC013470.2 a numeric vector
AC027796.3 a numeric vector

AC097636.1 a numeric vector
AC106741.1 a numeric vector
AC131160.1 a numeric vector
AC132217.2 a numeric vector
AC144573.1 a numeric vector
ACAP2 a numeric vector
ACBD5 a numeric vector
ACE a numeric vector
ACMSD a numeric vector
AC01 a numeric vector
AC02 a numeric vector
ACP5 a numeric vector
ACRV1 a numeric vector
ACSBG1 a numeric vector
ACSM5 a numeric vector
ACSM6 a numeric vector
ACTG1 a numeric vector
ACTN1 a numeric vector
ACTR3 a numeric vector
ADAM12 a numeric vector
ADAM15 a numeric vector
ADAM19 a numeric vector
ADAM32 a numeric vector
ADAMTS18 a numeric vector
ADAMTS7 a numeric vector
ADAMTS8 a numeric vector
ADCK2 a numeric vector
ADCY2 a numeric vector
ADCY8 a numeric vector
ADD3 a numeric vector
ADGRB3 a numeric vector
ADGRD2 a numeric vector
ADGRE2 a numeric vector
ADGRE5 a numeric vector
ADGRG7 a numeric vector
ADGRL4 a numeric vector
ADGRV1 a numeric vector

ADH4 a numeric vector
ADHFE1 a numeric vector
ADK a numeric vector
ADNP a numeric vector
ADPRH a numeric vector
ADRB2 a numeric vector
ADRM1 a numeric vector
AEN a numeric vector
AFAP1L2 a numeric vector
AGAP1 a numeric vector
AGGF1 a numeric vector
AGPS a numeric vector
AGR3 a numeric vector
AGRN a numeric vector
AHCYL1 a numeric vector
AHNAK a numeric vector
AK2 a numeric vector
AK8 a numeric vector
AKAP3 a numeric vector
AKAP4 a numeric vector
AKAP6 a numeric vector
AKIP1 a numeric vector
AKR1C1 a numeric vector
AL121845.3 a numeric vector
AL160272.2 a numeric vector
AL365214.2 a numeric vector
AL391628.1 a numeric vector
AL445989.1 a numeric vector
AL591806.2 a numeric vector
AL669918.1 a numeric vector
ALDH9A1 a numeric vector
ALDOB a numeric vector
ALDOC a numeric vector
ALG10B a numeric vector
ALG2 a numeric vector
ALG3 a numeric vector
ALG6 a numeric vector

ALKBH3 a numeric vector
ALOX5AP a numeric vector
ALYREF a numeric vector
AMDHD1 a numeric vector
AMPD3 a numeric vector
ANGPTL2 a numeric vector
ANGPTL5 a numeric vector
ANKFY1 a numeric vector
ANKLE2 a numeric vector
ANKRD20A1 a numeric vector
ANKRD24 a numeric vector
ANKRD29 a numeric vector
ANKRD36 a numeric vector
ANKRD36C a numeric vector
ANO2 a numeric vector
ANPEP a numeric vector
ANXA1 a numeric vector
ANXA7 a numeric vector
AP003108.2 a numeric vector
AP3S1 a numeric vector
AP3S2 a numeric vector
APEH a numeric vector
APEX2 a numeric vector
APH1A a numeric vector
APLN a numeric vector
APOBEC3B a numeric vector
APOBEC3G a numeric vector
APOBR a numeric vector
APOE a numeric vector
APOL1 a numeric vector
APOL4 a numeric vector
APPBP2 a numeric vector
AQP10 a numeric vector
AQP7 a numeric vector
ARAP3 a numeric vector
ARF4 a numeric vector
ARFGAP2 a numeric vector

ARHGAP11A a numeric vector
ARHGAP11B a numeric vector
ARHGAP24 a numeric vector
ARHGAP32 a numeric vector
ARHGDIG a numeric vector
ARHGEF17 a numeric vector
ARHGEF19 a numeric vector
ARL1 a numeric vector
ARL15 a numeric vector
ARL2.SNX15 a numeric vector
ARL5C a numeric vector
ARL6IP6 a numeric vector
ARMC4 a numeric vector
ARMC6 a numeric vector
ARMC9 a numeric vector
ARPC3 a numeric vector
ARPC4 a numeric vector
ARPP21 a numeric vector
ARSA a numeric vector
ARSI a numeric vector
ARSL a numeric vector
ART4 a numeric vector
ASAH2 a numeric vector
ASAP1 a numeric vector
ASB12 a numeric vector
ASCC3 a numeric vector
ASF1B a numeric vector
ASIC4 a numeric vector
ASPH a numeric vector
ASPM a numeric vector
ATAD2 a numeric vector
ATAD5 a numeric vector
ATG9B a numeric vector
ATIC a numeric vector
ATP11A a numeric vector
ATP11C a numeric vector
ATP13A4 a numeric vector

ATP1B2 a numeric vector
ATP1B3 a numeric vector
ATP2A3 a numeric vector
ATP2B1 a numeric vector
ATP4B a numeric vector
ATP5F1D a numeric vector
ATP5MC2 a numeric vector
ATP5ME a numeric vector
ATP6V0A4 a numeric vector
ATP9B a numeric vector
ATR a numeric vector
ATRAID a numeric vector
ATRIP a numeric vector
ATXN7 a numeric vector
AUNIP a numeric vector
AURKA a numeric vector
AVPI1 a numeric vector
AWAT1 a numeric vector
AZU1 a numeric vector
B3GAT2 a numeric vector
B3GNT7 a numeric vector
B3GNT8 a numeric vector
B4GALNT2 a numeric vector
B4GALT3 a numeric vector
B4GALT7 a numeric vector
B4GAT1 a numeric vector
BACH2 a numeric vector
BAG3 a numeric vector
BAG5 a numeric vector
BAHD1 a numeric vector
BAIAP3 a numeric vector
BANK1 a numeric vector
BASP1 a numeric vector
BATF2 a numeric vector
BAX a numeric vector
BAZ1B a numeric vector

Details

This is Train Uni sig data.

Value

A data frame with columns X and Y.

Source

<https://portal.gdc.cancer.gov/>

Examples

```
data(Train_Uni_sig_data)
## maybe str(Train_Uni_sig_data)
## plot(Train_Uni_sig_data)
```

Univariate_sig_features_f

Perform Univariate Survival Analysis

Description

This function performs univariate survival analysis on the provided datasets to identify significant features (genes or clinical features) associated with survival outcomes. It applies Cox proportional hazards models to compute hazard ratios and p-values for median expression cut-offs or clinical feature values.

Usage

```
Univariate_sig_features_f(  
  train_data,  
  test_data,  
  col_num,  
  surv_time,  
  surv_event  
)
```

Arguments

train_data	A data frame containing the training dataset. It must include survival time and event columns.
test_data	A data frame containing the test dataset. It must include survival time and event columns.
col_num	An integer specifying the column number in the dataset from which feature analysis should begin.
surv_time	A string specifying the name of the survival time column in the dataset.
surv_event	A string specifying the name of the survival event column in the dataset.

Details

The function first checks the validity of the input variables, such as whether the survival time and event columns are present in the training and test datasets. It then renames these columns to "OS_month" and "OS" internally for consistency. For each feature starting from the specified column number (col_num), univariate Cox proportional hazards models are fitted to assess the association between the feature and survival outcomes.

For clinical features, a similar process is applied, but the analysis is limited to the initial col_num - 1 columns.

Significant features are determined based on a p-value threshold of 0.05. The function returns the significant features and their corresponding hazard ratios, p-values, and other related statistics for both training and test datasets.

Value

A list containing:

Univariate_Survival_Significant_genes_List

A data frame of significant gene features with associated statistics.

Train_Uni_sig_data

A data frame of selected significant gene features for the training dataset.

Test_Uni_sig_data

A data frame of selected significant gene features for the test dataset.

Univariate_Survival_Significant_clin_List

A data frame of significant clinical features with associated statistics.

Train_Uni_sig_clin_data

A data frame of selected significant clinical features for the training dataset.

Test_Uni_sig_clin_data

A data frame of selected significant clinical features for the test dataset.

ZPH_Genes

A list of cox.zph objects for each gene feature, containing Schoenfeld residuals used to assess proportional hazards assumption.

PH_Summary_Genes

A data frame summarizing proportional hazards test results for each gene, including p-values and indicators of assumption violation.

Examples

```
# Example data (requires real survival datasets for testing)
train_data <- data.frame(
  OS_month = c(10, 15, 20, 25),
  OS = c(1, 0, 1, 1),
  Gene1 = c(2.3, 3.4, 1.2, 2.5),
  Gene2 = c(0.5, 1.8, 0.9, 0.6),
  Clinical1 = c(1, 0, 1, 0)
)
test_data <- data.frame(
  OS_month = c(12, 18, 22, 28),
  OS = c(1, 1, 0, 1),
  Gene1 = c(2.0, 3.1, 1.0, 2.3),
```

```
Gene2 = c(0.4, 1.5, 1.0, 0.7),
Clinical1 = c(1, 1, 0, 0)
)
#result <- Univariate_sig_features_f(
#  train_data = train_data,
#  test_data = test_data,
#  col_num = 3,
#  surv_time = "OS_month",
#  surv_event = "OS"
#)
```

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