

# Package ‘TCGAWorkflowData’

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**Title** Data for TCGA Workflow

**Version** 1.34.0

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**Description** This experimental data package contains 11 data sets necessary to follow the  
``TCGA Workflow: Analyze cancer genomics and epigenomics data using Bioconductor pack-  
ages".

**Depends** R (>= 3.5.0)

**Imports** SummarizedExperiment

**License** GPL-3

**VignetteBuilder** knitr

**biocViews** ExperimentData, Homo\_sapiens\_Data, MicroarrayData,  
CancerData

**NeedsCompilation** no

**URL** <https://f1000research.com/articles/5-1542/v2>

**BugReports** <https://github.com/BioinformaticsFMRP/TCGAWorkflow/issues>

**RoxygenNote** 7.2.3

**Suggests** knitr, rmarkdown, pandoc, testthat, BiocStyle

**git\_url** <https://git.bioconductor.org/packages/TCGAWorkflowData>

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|     |                                                                                                             |
|-----|-------------------------------------------------------------------------------------------------------------|
| exp | <i>A gene expression matrix for 10 GBM and 10 LGG samples prepared for the creation of an ELMER object.</i> |
|-----|-------------------------------------------------------------------------------------------------------------|

---

**Description**

A gene expression matrix for 10 GBM and 10 LGG samples prepared for the creation of an ELMER object.

**Format**

A matrix with 21022 rows and 20 samples

**Examples**

```
data("elmerExample")
```

---

|         |                                                     |
|---------|-----------------------------------------------------|
| exp_gbm | <i>A gene expression matrix with 20 GBM samples</i> |
|---------|-----------------------------------------------------|

---

**Description**

A gene expression matrix with 20 GBM samples

**Format**

Gene expression: A SummarizedExperiment object with 21022 rows and 20 columns

**Examples**

```
data("TCGA_GBM_Transcriptome_20_samples")
```

---

`exp_lgg`*A gene expression matrix with 20 LGG samples*

---

**Description**

A gene expression matrix with 20 LGG samples

**Format**

Gene expression: A SummarizedExperiment object with 21022 rows and 20 columns

**Examples**

```
data("TCGA_LGG_Transcriptome_20_samples")
```

---

`gbm.samples`*Identifiers for the 10 GBM samples in the ELMER objects*

---

**Description**

Identifiers for the 10 GBM samples in the ELMER objects

**Format**

A vector of 10 barcodes

**Examples**

```
data("elmerExample")
```

---

`genes`*A data frame object with gene information (hg19)*

---

**Description**

A data frame object with gene information (hg19)

**Format**

A dataframe object

**Examples**

```
data("genes_GR")
```

---

|          |                                                      |
|----------|------------------------------------------------------|
| genes_GR | <i>A GRanges object with gene information (hg19)</i> |
|----------|------------------------------------------------------|

---

### Description

A GRanges object with gene information (hg19)

### Format

A GRanges object

### Examples

```
data("genes_GR")
```

---

|                  |                                                                                                                                                                               |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| gistic_allbygene | <i>A subset of GBM GISTIC2 results, which is used to identify genes targeted by somatic copy-number alterations (SCNAs) From: GDAC firehose, downloaded with RTCGAtoolbox</i> |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

---

### Description

A subset of GBM GISTIC2 results, which is used to identify genes targeted by somatic copy-number alterations (SCNAs) From: GDAC firehose, downloaded with RTCGAtoolbox

### Format

A matrix with 24776 rows and 580 columns

### Examples

```
data("gbm_gistic")
```

---

|                         |                                                                                                                                                                               |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| gistic_thresholedbygene | <i>A subset of GBM GISTIC2 results, which is used to identify genes targeted by somatic copy-number alterations (SCNAs) From: GDAC firehose, downloaded with RTCGAtoolbox</i> |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

---

### Description

A subset of GBM GISTIC2 results, which is used to identify genes targeted by somatic copy-number alterations (SCNAs) From: GDAC firehose, downloaded with RTCGAtoolbox

### Format

A matrix with 24776 rows and 580 columns

### Examples

```
data("gbm_gistic")
```

---

|               |                                                                           |
|---------------|---------------------------------------------------------------------------|
| histone.marks | <i>histone marks specific for brain tissue from the Roadmap database.</i> |
|---------------|---------------------------------------------------------------------------|

---

**Description**

histone marks specific for brain tissue from the Roadmap database.

**Format**

A matrix with 72102 rows and 114 columns

**Examples**

```
data("histoneMarks")
```

---

|             |                                                                |
|-------------|----------------------------------------------------------------|
| lgg.samples | <i>Identifiers for the 10 LGG samples in the ELMER objects</i> |
|-------------|----------------------------------------------------------------|

---

**Description**

Identifiers for the 10 LGG samples in the ELMER objects

**Format**

A vector of 10 barcodes

**Examples**

```
data("elmerExample")
```

---

|     |                                                                                                                 |
|-----|-----------------------------------------------------------------------------------------------------------------|
| maf | <i>Merged LGG and GBM GDC MAF files from GDC workflow: Aliquot Ensemble Somatic Variant Merging and Masking</i> |
|-----|-----------------------------------------------------------------------------------------------------------------|

---

**Description**

Merged LGG and GBM GDC MAF files from GDC workflow: Aliquot Ensemble Somatic Variant Merging and Masking

**Format**

A matrix with 87957 rows and 141 columns

**Examples**

```
data("maf_lgg_gbm")
```

---

|     |                                                                                                                                      |
|-----|--------------------------------------------------------------------------------------------------------------------------------------|
| met | <i>A SummarizedExperiment containing TCGA data: DNA methylation platform 450K chromosome 9 for 10 LGG samples and 10 GBM samples</i> |
|-----|--------------------------------------------------------------------------------------------------------------------------------------|

---

### Description

A SummarizedExperiment containing TCGA data: DNA methylation platform 450K chromosome 9 for 10 LGG samples and 10 GBM samples

### Format

A SumarrizedExperiment with 9861 rows and 20 samples

### Examples

```
data("elmerExample")
```

---

|                  |                               |
|------------------|-------------------------------|
| TCGAWorkflowData | <i>Data for TCGA Workflow</i> |
|------------------|-------------------------------|

---

### Description

This experimental data package has the data necessary to follow the TCGA Workflow: Analyze cancer genomics and epigenomics data using Bioconductor packages. It contains the following files:

- met20SamplesGBMLGGchr9: DNA methylation matrix from Infinium HumanMethylation450 platform for 10 LGG (Lower grade glioma) and 10 GBM (Glioblastoma multiforme). It has only probes in chromosome 9 in order to make the example of the workflow faster
- elmerExample: Contains a DNA methylation matrix (only probes in chromosome 9) and a gene expression matrix for 10 LGG (Lower grade glioma) and 10 GBM (Glioblastoma multiforme) in the required format for to execute the R/Bioconductor ELMER package analysis and a vector identifying which sample belongs to each tumor type.
- biogrid: biogrid information
- maf\_lgg\_gbm: Mutation annotation files for LGG (Lower grade glioma) and GBM (Glioblastoma multiforme) samples merged into a single matrix. The GDC Somatic Mutation Calling Workflow mutect2 was used to create this MAF files.
- histoneMarks: histone marks specific for brain tissue using from Roadmap database.
- genes\_GR: A GRanges Object and a dataframe with gene information (hg19) downloaded from ENSEMBLE database using biomaRt via TCGAbiolinks
- TCGA\_GBM\_Transcriptome\_20\_samples: a matrix with raw expression signal for expression of a gene for 20 GBM (Glioblastoma multiforme) samples
- TCGA\_LGG\_Transcriptome\_20\_samples: a matrix with raw expression signal for expression of a gene for 20 LGG (low grade glioma) samples

For more information how to create these objects please read the vignette of this package with the follwing command: `browseVignettes("TCGAWorkflowData")`

**Examples**

```
data("elmerExample")
data("TCGA_LGG_Transcriptome_20_samples")
data("TCGA_GBM_Transcriptome_20_samples")
data("histoneMarks")
data("biogrid")
data("genes_GR")
data("maf_lgg_gbm")
```

---

tmp.biogrid*Biogrid information*

---

**Description**

Biogrid information

**Format**

Two matrices with 24776 rows and 580 columns

**Examples**

```
data("biogrid")
```

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