

Package ‘CTCF’

January 28, 2026

Title Genomic coordinates of CTCF binding sites, with orientation

Version 0.99.14

Description Genomic coordinates of CTCF binding sites, with strand orientation (directionality of binding). Position weight matrices (PWMs) from JASPAR, HOCOMOCO, CIS-BP, CTCFBSDB, SwissRegulon, Jolma 2013, were used to uniformly predict CTCF binding sites using FIMO (default settings) on human (hg18, hg19, hg38, T2T) and mouse (mm9, mm10, mm39) genome assemblies. Extra columns include motif/PWM name (e.g., MA0139.1), score, p-value, q-value, and the motif sequence. It is recommended to filter FIMO-predicted sites by 1e-6 p-value threshold instead of using the default 1e-4 threshold. Experimentally obtained CTCF-bound cis-regulatory elements from ENCODE SCREEN and predicted CTCF sites from CTCFBSDB are also included. Selected data are lifted over from a different genome assembly as we demonstrated liftOver is a viable option to obtain CTCF coordinates in different genome assemblies. CTCF sites obtained using JASPAR's MA0139.1 PWM and filtered at 1e-6 p-value threshold are recommended.

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Encoding UTF-8

Roxygen list(markdown = TRUE)

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BugReports <https://github.com/dozmorovlab/CTCF/issues>

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biocViews AnnotationData, AnnotationHub, FunctionalAnnotation, GenomicSequence

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hg18.CTCFBSDB.CTCF_predicted_human
hg18.CTCFBSDB.CTCF_predicted_human

Description

hg18 CTCF predicted motifs from <https://insulatordb.uthsc.edu/>.

Author(s)

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hg18.MA0139.1 *hg18.MA0139.1*

Description

hg18 CTCF motifs detected using MA0139.1 PWM matrix from <https://jaspar.genereg.net/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

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hg19.CIS_BP_2.00_Homo_sapiens

hg19.CIS_BP_2.00_Homo_sapiens

Description

hg19 CTCF motifs detected using human PWM matrices from <http://cisbp.ccbr.utoronto.ca/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

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hg19.CTCFBSDB.CTCF_predicted_human

hg19.CTCFBSDB.CTCF_predicted_human

Description

hg19 CTCF predicted motifs from <https://insulatordb.uthsc.edu/>. liftOver from hg18

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

hg19.CTCFBSDB_PWM

hg19.CTCFBSDB_PWM

Description

hg19 CTCF motifs detected using PWM matrices from <https://insulatordb.uthsc.edu/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

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hg19.HOCOMOCOv11_core_HUMAN_mono_meme_format

hg19.HOCOMOCOv11_core_HUMAN_mono_meme_format

Description

hg19 CTCF motifs detected using human PWM matrices from <https://hocomoco11.autosome.org/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

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hg19.JASPAR2022_CORE_vertetrates_non_redundant_v2

hg19.JASPAR2022_CORE_vertetrates_non_redundant_v2

Description

hg19 CTCF motifs detected using human PWM matrices from <https://jaspar.genereg.net/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

hg19.Jolma2013

hg19.Jolma2013

Description

hg19 CTCF motifs detected using PWM matrices from DOI:10.1016/j.cell.2012.12.009, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

hg19.MA0139.1

hg19.MA0139.1

Description

hg19 CTCF motifs detected using MA0139.1 PWM matrix from <https://jaspar.genereg.net/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

hg19.SwissRegulon_human_and_mouse

hg19.SwissRegulon_human_and_mouse

Description

hg19 CTCF motifs detected using PWM matrices from <https://swissregulon.unibas.ch/sr/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

hg38.CIS_BP_2.00_Homo_sapiens

hg38.CIS_BP_2.00_Homo_sapiens

Description

hg38 CTCF motifs detected using human PWM matrices from <http://cisbp.ccbr.utoronto.ca/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

hg38.CTCFBSDB.CTCF_predicted_human*hg38.CTCFBSDB.CTCF_predicted_human*

Description

hg38 CTCF predicted motifs from <https://insulatordb.uthsc.edu/>. liftOver from hg18

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

hg38.CTCFBSDB_PWM*hg38.CTCFBSDB_PWM*

Description

hg38 CTCF motifs detected using PWM matrices from <https://insulatordb.uthsc.edu/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

hg38.HOCOMOCOv11_core_HUMAN_mono_meme_format*hg38.HOCOMOCOv11_core_HUMAN_mono_meme_format*

Description

hg38 CTCF motifs detected using human PWM matrices from <https://hocomoco11.autosome.org/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

hg38.JASPAR2022_CORE Vertebrates non-redundant_v2	
	<i>hg38.JASPAR2022_CORE Vertebrates non-redundant_v2</i>

Description

hg38 CTCF motifs detected using human PWM matrices from <https://jaspar.genereg.net/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

hg38.Jolma2013	<i>hg38.Jolma2013</i>
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Description

hg38 CTCF motifs detected using PWM matrices from DOI:10.1016/j.cell.2012.12.009, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

hg38.MA0139.1	<i>hg38.MA0139.1</i>
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Description

hg38 CTCF motifs detected using MA0139.1 PWM matrix from <https://jaspar.genereg.net/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

hg38.SCREEN.GRCh38_CTCF*hg38.SCREEN.GRCh38_CTCF*

Description

hg38 CTCF-bound human cis-regulatory elements from <https://screen.encodeproject.org/>. Derived from experimentally obtained data.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

hg38.SwissRegulon_human_and_mouse*hg38.SwissRegulon_human_and_mouse*

Description

hg38 CTCF motifs detected using PWM matrices from <https://swissregulon.unibas.ch/sr/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

mm10.CIS_BP_2.00_Homo_sapiens*mm10.CIS_BP_2.00_Homo_sapiens*

Description

mm10 CTCF motifs detected using human PWM matrices from <http://cisbp.ccbbr.utoronto.ca/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

mm10.CTCFBSDB.CTCF_predicted_human

mm10.CTCFBSDB.CTCF_predicted_human

Description

mm10 CTCF predicted motifs from <https://insulatordb.uthsc.edu/>. liftOver from mm8

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

mm10.CTCFBSDB_PWM

mm10.CTCFBSDB_PWM

Description

mm10 CTCF motifs detected using PWM matrices from <https://insulatordb.uthsc.edu/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

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mm10.HOCOMOCov11_core_HUMAN_mono_meme_format

mm10.HOCOMOCov11_core_HUMAN_mono_meme_format

Description

mm10 CTCF motifs detected using human PWM matrices from <https://hocomoco11.autosome.org/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

mm10.JASPAR2022_CORE vertebrates_non_redundant_v2
<i>mm10.JASPAR2022_CORE vertebrates_non_redundant_v2</i>

Description

mm10 CTCF motifs detected using human PWM matrices from <https://jaspar.genereg.net/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

mm10.Jolma2013	<i>mm10.Jolma2013</i>
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Description

mm10 CTCF motifs detected using PWM matrices from DOI:10.1016/j.cell.2012.12.009, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

mm10.MA0139.1	<i>mm10.MA0139.1</i>
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Description

mm10 CTCF motifs detected using MA0139.1 PWM matrix from <https://jaspar.genereg.net/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

mm10.SCREEN.GRCh38_CTCF

mm10.SCREEN.GRCh38_CTCF

Description

mm10 CTCF-bound human cis-regulatory elements from <https://screen.encodeproject.org/>. Derived from experimentally obtained data.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

mm10.SwissRegulon_human_and_mouse

mm10.SwissRegulon_human_and_mouse

Description

mm10 CTCF motifs detected using PWM matrices from <https://swissregulon.unibas.ch/sr/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

mm39.CIS_BP_2.00_Homo_sapiens

mm39.CIS_BP_2.00_Homo_sapiens

Description

mm39 CTCF motifs detected using human PWM matrices from <http://cisbp.cibr.utoronto.ca/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

mm39.CTCFBSDB_PWM	<i>mm39.CTCFBSDB_PWM</i>
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Description

mm39 CTCF motifs detected using PWM matrices from <https://insulatordb.uthsc.edu/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

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mm39.HOCOMOCov11_core_HUMAN_mono_meme_format	<i>mm39.HOCOMOCov11_core_HUMAN_mono_meme_format</i>
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Description

mm39 CTCF motifs detected using human PWM matrices from <https://hocomoco11.autosome.org/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

mm39.JASPAR2022_CORE_vertbrates_non_redundant_v2	<i>mm39.JASPAR2022_CORE_vertbrates_non_redundant_v2</i>
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Description

mm39 CTCF motifs detected using human PWM matrices from <https://jaspar.genereg.net/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

mm39.Jolma2013

mm39.Jolma2013

Description

mm39 CTCF motifs detected using PWM matrices from DOI:10.1016/j.cell.2012.12.009, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

mm39.MA0139.1

mm39.MA0139.1

Description

mm39 CTCF motifs detected using MA0139.1 PWM matrix from <https://jaspar.genereg.net/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

mm39.SwissRegulon_human_and_mouse

mm39.SwissRegulon_human_and_mouse

Description

mm39 CTCF motifs detected using PWM matrices from <https://swissregulon.unibas.ch/sr/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

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mm8.CTCFBSDB.CTCF_predicted_human

mm8.CTCFBSDB.CTCF_predicted_human

Description

mm8 CTCF predicted motifs from <https://insulatordb.uthsc.edu/>.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

mm9.CIS_BP_2.00_Homo_sapiens

mm9.CIS_BP_2.00_Homo_sapiens

Description

mm9 CTCF motifs detected using human PWM matrices from <http://cisbp.ccbr.utoronto.ca/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

mm9.CTCFBSDB.CTCF_predicted_human

mm9.CTCFBSDB.CTCF_predicted_human

Description

mm9 CTCF predicted motifs from <https://insulatordb.uthsc.edu/>. liftOver from mm8

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

`mm9.CTCFBSDB_PWM`*mm9.CTCFBSDB_PWM*

Description

mm9 CTCF motifs detected using PWM matrices from <https://insulatordb.uthsc.edu/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

`mm9.HOCOMOCOv11_core_HUMAN_mono_meme_format`*mm9.HOCOMOCOv11_core_HUMAN_mono_meme_format*

Description

mm9 CTCF motifs detected using human PWM matrices from <https://hocomoco11.autosome.org/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

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`mm9.JASPAR2022_CORE vertebrates_non_redundant_v2`*mm9.JASPAR2022_CORE vertebrates_non_redundant_v2*

Description

mm9 CTCF motifs detected using human PWM matrices from <https://jaspar.genereg.net/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

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mm9.Jolma2013*mm9.Jolma2013*

Description

mm9 CTCF motifs detected using PWM matrices from DOI:10.1016/j.cell.2012.12.009, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

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mm9.MA0139.1*mm9.MA0139.1*

Description

mm9 CTCF motifs detected using MA0139.1 PWM matrix from <https://jaspar.genereg.net/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

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mm9.SwissRegulon_human_and_mouse*mm9.SwissRegulon_human_and_mouse*

Description

mm9 CTCF motifs detected using PWM matrices from <https://swissregulon.unibas.ch/sr/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

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T2T.CIS_BP_2.00_Homo_sapiens

T2T.CIS_BP_2.00_Homo_sapiens

Description

T2T CTCF motifs detected using human PWM matrices from <http://cisbp.ccbr.utoronto.ca/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

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T2T.CTCFBSDB_PWM

T2T.CTCFBSDB_PWM

Description

T2T CTCF motifs detected using PWM matrices from <https://insulatordb.uthsc.edu/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

T2T.HOCOMOCov11_core_HUMAN_mono_meme_format

T2T.HOCOMOCov11_core_HUMAN_mono_meme_format

Description

T2T CTCF motifs detected using human PWM matrices from <https://hocomoco11.autosome.org/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

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T2T.JASPAR2022_CORE Vertebrates Non-Redundant v2

T2T.JASPAR2022_CORE Vertebrates Non-Redundant v2

Description

T2T CTCF motifs detected using human PWM matrices from <https://jaspar.genereg.net/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

T2T.Jolma2013

T2T.Jolma2013

Description

T2T CTCF motifs detected using PWM matrices from DOI:10.1016/j.cell.2012.12.009, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

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T2T.MA0139.1

T2T.MA0139.1

Description

T2T CTCF motifs detected using MA0139.1 PWM matrix from <https://jaspar.genereg.net/>, by FIMO. Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

T2T.SwissRegulon_human_and_mouse

T2T.SwissRegulon_human_and_mouse

Description

T2T CTCF motifs detected using PWM matrices from <https://swissregulon.unibas.ch/sr/>, by FIMO.
Filtering by p-value < 1e-6 and reducing GRanges is recommended.

Author(s)

Mikhail Dozmorov <mikhail.dozmorov@gmail.com>

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