Supplementary file 1 – Bioinformatics Resources

The following table present key resources used for the computational analysis of RNA-seq and ChIP-seq data. References to corresponding publications and links to online sources are included. Python-based software and tools have been obtained from the Anaconda Cloud (<https://anaconda.com>) using the Bioconda channel (<https://bioconda.github.io/>). R-based packages have been obtained from either the Comprehensive R Archive Network (CRAN) or from Bioconductor (<https://bioconductor.org/about/>).

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| --- | --- | --- |
| Resource/Software/Algorithm | References | Available |
| Mouse reference genome (mm10), UCSC | - | (http://hgdownload.cse.ucsc.edu/goldenpath/mm10/bigZips/). |
| Mouse reference genome and annotation, release M24, GENCODE | (Frankish et al., 2019) | https://www.gencodegenes.org/mouse/ |
| ENCODE blacklisted regions, Version 2 | (Amemiya et al., 2019) | https://github.com/Boyle-Lab/Blacklist/tree/master/lists |
| R programming language  Version 3.4.4 | (R Core Team, 2017) | https://cran.r-project.org/ |
| Rstudio  Version 1.1.463 | (Rstudio Team, 2015) | https://rstudio.com/ |
| FastQC  Version 0.11.5 | (Andrews, 2010) | https://anaconda.org/bioconda/fastqc |
| FastQ Screen  Version 0.13.0 | (Wingett and Andrews, 2018) | https://anaconda.org/bioconda/fastq-screen |
| MultiQC  Version 1.7 | (Ewels et al., 2016) | https://anaconda.org/bioconda/multiqc |
| Bowtie2  Version 2.3.4.1 | (Langmead and Salzberg, 2012) | https://anaconda.org/bioconda/bowtie2 |
| SamTools  Version 1.9 | (Li et al., 2009) | https://anaconda.org/bioconda/samtools |
| MACS2  Version 2.2.6 | (Zhang et al., 2008) | https://anaconda.org/bioconda/macs2 |
| BedTools  Version 2.26.0 | (Quinlan and Hall, 2010) | https://anaconda.org/bioconda/bedtools |
| ChIPpeakAnno, R-package  Version 3.12.7 | (Zhu et al., 2010) | https://www.bioconductor.org/packages/3.6/bioc/html/ChIPpeakAnno.html |
| ChIPseeker, R-package  Version 1.14.2 | (Yu et al., 2015) | https://www.bioconductor.org/packages/3.6/bioc/html/ChIPseeker.html |
| ggplot2, R-package  Version 3.2.1 | (Wickham, 2016) | https://ggplot2.tidyverse.org/ |
| Integrative Genomic Viewer (IGV), Version 2.4.17 | (Robinson et al., 2011) | https://anaconda.org/bioconda/igv |
| HOMER | (Heinz et al., 2010) | https://anaconda.org/bioconda/homer |
| BBDuk, part of the BBTools suite, Version 38.58 | (Bushnell, n.d.) | sourceforge.net/projects/bbmap |
| Spliced Transcripts Alignment to a Reference (STAR), Version 2.7.3a | (Dobin et al., 2013) | https://anaconda.org/bioconda/star |
| DESeq2, R-package  Version 1.18.1 | (Love et al., 2014) | https://bioconductor.org/packages/3.6/bioc/html/DESeq2.html |
| Benjamini-Hochberg FDR correction (MACS2) | (Benjamini and Hochberg, 2018) | - |
| Pheatmap, R-package  Version 1.0.12 | (Kolde, 2019) | https://CRAN.R-project.org/package=pheatmap |
| GeneOverlap, R-package  Version 1.14.0 | (Shen and Sinai, 2013) | http://shenlab-sinai.github.io/shenlab-sinai/ |

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