EpipwR.data: Reference data for EpipwR

2024-04-09

EpipwR.data is used to access reference data from ExperimentHub for the EpipwR package.

Data

The data sets accessed through this package are based on source data publicly available on the Gene expression omnibus. The authors would like to acknowledge the work done by Graw et. al. (2019) in identifying the source data sets for EWAS power analyses. EpipwR uses beta distribution parameters α,β, estimated through method of moments. Specifically, beta values are calculated from the source data set for every subject/CpG combination. Sample means and variances are then calculated for each CpG site. Finally, these are converted to α,β, using the below formulas:

$\hat{\alpha} = \frac{\bar{x}^2(1-\bar{x})}{s^2} - \bar{x}$

$\hat{\beta} = \frac{\hat{\alpha}(1-\bar{x})}{\bar{x}}$

The below table has access information for each of the source data sets.

Tissue Type	Accession Number	Reference
Saliva	GSE92767	(Hong et al., 2017)
Lymphoma	GSE42372	(Matsunaga et al., 2014)
Placenta	GSE62733	(Kawai et al., 2015)
Liver	GSE61258	(Horvath et al., 2014)
Colon	GSE77718	(McInnes et al., 2017)
Blood (Adults)	GSE42861	(Kular et al., 2018; Y. Liu et al., 2013)
Blood (Children)	GSE83334	(Urdinguio et al., 2016)
Blood (Newborns)	GSE82273	(Markunas et al., 2016)
Cord-blood (whole blood)	GSE69176	
Cord-blood (PBMC)	GSE110128	(Langie et al., 2018)
Adult (PBMC)	GSE67170	(Y. H. Zhang et al., 2018)
Sperm	GSE114753	(Jenkins et al., 2017)

References

Graw, S., Henn, R., Thompson, J. A., & Koestler, D. C. (2019). pwrEWAS: a user-friendly tool for comprehensive power estimation for epigenome wide association studies (EWAS). *BMC Bioinformatics*, 20(1), 218–218.