

Description of Additional Supplementary Files

File Name: Supplementary_Data_1

Description: The compiled human interactome that was used in this study. (.gml)

File Name: Supplementary_Data_2

Description: The list of the CLOUD screening library including the concentrations used. (.csv)

File Name: Supplementary_Data_3

Description: CLOUD, Drugbank, Pubchem and ChEMBL identifier for each drug. (.csv)

File Name: Supplementary_Data_4

Description: MOAs for the individual drugs. (.csv)

File Name:Supplementary_Data_5

Description: List of all annotated proteins for the individual drugs, grouped into targets, enzymes, transporters and carriers. (.csv)

File Name:Supplementary_Data_6

Description: Cell culture conditions for the chosen MCF10A cell line. (.csv)

File Name:Supplementary_Data_7

Description: The two CellProfiler pipelines used to extract morphological features. (.cpproj)

File Name:Supplementary_Data_8

Description: List of all features extracted by CellProfiler. (.csv)

File Name:Supplementary_Data_9

Description: Selected features, defining the morphological space. (.csv)

File Name:Supplementary_Data_10

Description: Perturbation Mahalanobis distances D_p for each drug and batch. (.csv)

File Name:Supplementary_Data_11

Description: Features and data sources used for the interaction predictions (.csv)

File Name:Supplementary_Data_12

Description: List of drug specific feature values. (.csv)

File Name:Supplementary_Data_13

Description: List of drug pair specific feature values. (.csv)

File Name:Supplementary_Data_14

Description: List of perturbation vectors for the concentration experiment. (.csv)

File Name: Supplementary_Data_15

Description: All diseases annotated to the targets of the individual drugs. (.csv)