**Description of Additional Supplementary Files**

File Name: Supplementary Data 1

Description: The human protein-protein interactome used in our study.

File Name: Supplementary Data 2

Description: The experimentally validated drug-target interactions.

File Name: Supplementary Data 3

Description: The lists of experimentally validated drug combinations.

File Name: Supplementary Data 4

Description: The lists of clinically reported adverse drug interactions.

File Name: Supplementary Data 5

Description: The network-predicted hypertensive drug combinations.