

**Supplementary File 4.** In silico methods used for drug repurposing

| Method              | Software                  | Reference   |
|---------------------|---------------------------|---|
| Molecular Modelling | Autodock Vina             | <a href="https://doi.org/10.1002/jcc.21334">https://doi.org/10.1002/jcc.21334</a>                         |
|                     | GLIDE                     | <a href="https://doi.org/10.1021/jm0306430">https://doi.org/10.1021/jm0306430</a>                         |
|                     | MOE                       | <a href="https://doi.org/10.1002/bmb.65">https://doi.org/10.1002/bmb.65</a>                               |
|                     | e-LEA3D                   | <a href="https://doi.org/10.1093/nar/gkq322">https://doi.org/10.1093/nar/gkq322</a>                       |
|                     | OELib library enumeration | OELib library enumeration.<br><a href="http://www.eyesopen.com">http://www.eyesopen.com</a>               |
| Signature-based     | ChemOffice CombiChem      | <a href="https://doi.org/10.1021/ja1005306">https://doi.org/10.1021/ja1005306</a>                         |
|                     | CMAp                      | <a href="https://doi.org/10.1126/science.1132939">https://doi.org/10.1126/science.1132939</a>             |
|                     | GoPredict                 | <a href="https://doi.org/10.1186/s13040-016-0097-1">https://doi.org/10.1186/s13040-016-0097-1</a>         |
|                     | Gene2Drug                 | <a href="https://doi.org/10.1093/bioinformatics/btx800">https://doi.org/10.1093/bioinformatics/btx800</a> |
|                     | NFFinder                  | <a href="https://doi.org/10.1093/nar/gkv445">https://doi.org/10.1093/nar/gkv445</a>                       |
| Network-based       | L1000CDS                  | <a href="https://doi.org/10.1038/npjcsba.2016.15">https://doi.org/10.1038/npjcsba.2016.15</a>             |
|                     | STITCH                    | <a href="https://doi.org/10.1093/nar/gkm795">https://doi.org/10.1093/nar/gkm795</a>                       |
|                     | DrugNet                   | <a href="https://doi.org/10.1016/j.artmed.2014.11.003">https://doi.org/10.1016/j.artmed.2014.11.003</a>   |
|                     | MBiRW                     | <a href="https://doi.org/10.1093/bioinformatics/btw228">https://doi.org/10.1093/bioinformatics/btw228</a> |
|                     | BalestraWeb               | <a href="https://doi.org/10.1093/bioinformatics/btu599">https://doi.org/10.1093/bioinformatics/btu599</a> |
| DrugGenEx-Net       |                           | <a href="https://doi.org/10.1186/s12859-016-1065-y">https://doi.org/10.1186/s12859-016-1065-y</a>         |

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| Learning Approach | BenevolentIA | <a href="https://doi.org/10.1016/S0140-6736(20)30304-4">https://doi.org/10.1016/S0140-6736(20)30304-4</a>   |
|                   | DeepChem     | Deep-learning models for Drug Discovery and Quantum Chemistry.<br><a href="https://github.com/deepchem/deepchem">https://github.com/deepchem/deepchem</a> |
|                   | Atomwise     | <a href="https://doi.org/10.48550/arXiv.1510.02855">https://doi.org/10.48550/arXiv.1510.02855</a>   |
|                   | deepDR       | <a href="https://doi.org/10.1093/bioinformatics/btz418">https://doi.org/10.1093/bioinformatics/btz418</a>   |
|                   | DTINet       | <a href="https://doi.org/10.1038/s41467-017-00680-8">https://doi.org/10.1038/s41467-017-00680-8</a>   |
|                   | DeepDrug     | <a href="https://doi.org/10.1101/2020.11.09.375626">https://doi.org/10.1101/2020.11.09.375626</a>   |
|                   | DeepPropose  | <a href="https://doi.org/10.48550/arXiv.2004.08919">https://doi.org/10.48550/arXiv.2004.08919</a>   |

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