**SUPPLEMENTARY METHODS**

**Method S1-Selection of pathway use cases:**

Consistent with the idea of broad applicability, we chose to build our use-cases on well curated and relevant pathways selected as described below:

1. List of 20 ‘most viewed’ human pathways from Wikipathways (31st May 2013)
2. Quality of pathway (curation tags in Wikipathways, minimum annotation errors)
3. Linkage to disease ontology terms
4. Number of PMIDs associated with each pathway
5. Number of compounds and known drugs hitting every protein in a given pathway adding a filter for endpoints 'IC50', 'Ki', 'Activity', 'Potency', 'Kd', 'Inhibition', and 'EC50’