

Supplementary Table 2

| | GO | | KEGG | | REACTOME | |
|--------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| | Patients with ≥ 2 phenotypes: | Patients with ≥ 3 phenotypes: | Patients with ≥ 2 phenotypes: | Patients with ≥ 3 phenotypes: | Patients with ≥ 2 phenotypes: | Patients with ≥ 3 phenotypes: |
| PhenCo Clusters | 895.00 | 261.00 | 586.00 | 110.00 | 458.00 | 71.00 |
| Randomized Clusters | 477.15 ±105.4 | 32.59 ±14.9 | 320.08 ±89.8 | 33.23 ±15.2 | 261.15 ±89.3 | 15.24 ±89.3 |

Table 2: Overlap between DECIPHER patient phenotypes and PhenCo clusters. Columns show total numbers of patients with at least 2 and 3 phenotypes in the same PhenCo cluster, for the real clusters and for clusters formed by randomizing Cluster-HPO membership, keeping the same number of HPOs per cluster and the same distribution of HPO terms.