

Supplemental Data 02: Coverage summary (as of 2025-10-15; all computed locally in MetaDB, no federation)

| | Total bioresources | Bioresources with ≥ 1 NCBI Gene | Bioresources whose linked genes resolve to ≥ 1 UniProt protein | Bioresources reaching ≥ 1 ChEBI role | Bioresources with ≥ 1 GO term |
|--|--------------------|--------------------------------------|---|---|------------------------------------|
| DNA material (e.g., <i>Homo sapiens</i> , <i>Mus musculus</i>). | 169,107 | 136,989 (81.0% = 136,989/169,107) | 127,257 (75.3% = 127,257/169,107) | 19,809 (11.7% = 19,809/169,107) | 108,589 (64.2% = 108,589/169,107) |
| Plant DNA material (<i>Arabidopsis thaliana</i>) | 612,129 | 267,613 (43.7% = 267,613/612,129) | 266,167 (43.5% = 266,167/612,129) | 61,499 (10.0% = 61,499/612,129) | 254,082 (41.5% = 254,082/612,129) |

Notes. “Bioresources whose linked genes resolve to ≥ 1 UniProtKB protein” means: at least one gene attached to the resource could be resolved to a UniProtKB protein (gene -> protein). NCBI Gene IRIs are normalized across four accepted patterns before DISTINCT counting. External graphs (UniProtKB, Rhea, ChEBI, GO) are hosted locally in MetaDB; no SERVICE federation was used.

| | NCBI Gene related to bioresources | UniProt protein related to bioresources | ChEBI role related to bioresources | GO term related to bioresources |
|--------------------|-----------------------------------|---|------------------------------------|---------------------------------|
| DNA material | 36,060 | 49,670 | 166(12.2% = 166/1364) | 18,273(85.6% = 18,273/21,352) |
| Plant DNA material | 27,841 | 54,982 | 163(12.0% = 163/1364) | 6,459(30.3% = 6,459/21,352) |

