**Table S2** The enrichment in CGC database compared with our method and previous method

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| BRCA | top-10 | top-20 | top-30 | top-50 | top-100 |
| Our method | 99.82% | 100.00% | 100.00% | 100.00% | 100.00% |
| Previous method | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| LUAD | top-10 | top-20 | top-30 | top-50 | top-100 |
| Our method | 99.62% | 100.00% | 100.00% | 100.00% | 100.00% |
| Previous method | 96.76% | 88.72% | 98.96% | 99.99% | 100.00% |
| LUSC | top-10 | top-20 | top-30 | top-50 | top-100 |
| Our method | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| Previous method | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| LIHC | top-10 | top-20 | top-30 | top-50 | top-100 |
| Our method | 98.92% | 99.73% | 100.00% | 100.00% | 100.00% |
| Previous method | 74.54% | 88.69% | 99.98% | 100.00% | 100.00% |