

Table S1. The details of the original RBP-24 dataset.

| RBP | Training Set | | | Testing Set | | |
|---------------|-----------------|----------------------|----------------------|-----------------|----------------------|----------------------|
| | Dataset Size | Positive Examples | Negative Examples | Dataset Size | Positive Examples | Negative Examples |
| ALKBH5 | 2410 | 1197 | 1213 | 266 | 134 | 132 |
| C17ORF8 5 | 3754 | 1905 | 1849 | 411 | 206 | 205 |
| C22ORF2 8 | 18,505 | 9369 | 9136 | 1000 | 500 | 500 |
| CAPRIN1 | 16,041 | 8140 | 7901 | 1000 | 500 | 500 |
| AGO2 | 92,346 | 48,095 | 44,251 | 1000 | 500 | 500 |
| ELAVL1 H | 17,031 | 8595 | 8436 | 1000 | 500 | 500 |
| SFRS1 | 36,633 | 19,438 | 17,195 | 1000 | 500 | 500 |
| HNRNPC | 41,266 | 21,472 | 19,794 | 1000 | 500 | 500 |
| TDP43 | 167,110 | 92,031 | 75,079 | 1000 | 500 | 500 |
| TIA1 | 34,184 | 18,049 | 16,135 | 1000 | 500 | 500 |
| TIAL1 | 78,984 | 42,332 | 36,652 | 1000 | 500 | 500 |
| AGO1-4 | 68,212 | 36,902 | 31,310 | 1000 | 500 | 500 |
| ELAVL1B | 51,249 | 27,275 | 23,974 | 1000 | 500 | 500 |
| ELAVL1 A | 18,747 | 9464 | 9283 | 1000 | 500 | 500 |
| EWSR1 | 31,012 | 16,292 | 1472 | 1000 | 500 | 500 |
| FUS | 66,061 | 34,581 | 31,480 | 1000 | 500 | 500 |
| ELAVL1C | 238,888 | 125,202 | 113,686 | 1000 | 500 | 500 |
| IGF2BP1- 3 | 15,377 | 8539 | 6838 | 1000 | 500 | 500 |
| MOV10 | 26,780 | 13,793 | 12,987 | 1000 | 500 | 500 |
| PUM2 | 17,343 | 9116 | 8227 | 1000 | 500 | 500 |
| QKI | 19,418 | 10,276 | 9142 | 1000 | 500 | 500 |
| TAF15 | 13,904 | 7298 | 6606 | 1000 | 500 | 500 |
| PTB | 88,274 | 44,574 | 43,700 | 1000 | 500 | 500 |
| ZC3H7B | 40,890 | 20,962 | 20,018 | 1000 | 500 | 500 |