**S3 Table Cosine coefficients between humanized *S. pombe* mutational patterns and COSMIC v3.1 SBS signatures**

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| --- | --- | --- |
| COSMIC Signatures | wild type (WT) | *pol2 P287R* |
| SBS1\_GRCh38 | 0.20 | 0.05 |
| SBS2\_GRCh38 | 0.17 | 0.08 |
| SBS3\_GRCh38 | 0.69 | 0.50 |
| SBS4\_GRCh38 | 0.60 | 0.59 |
| SBS5\_GRCh38 | 0.67 | 0.43 |
| SBS6\_GRCh38 | 0.36 | 0.15 |
| SBS7a\_GRCh38 | 0.25 | 0.13 |
| SBS7b\_GRCh38 | 0.39 | 0.20 |
| SBS7c\_GRCh38 | 0.15 | 0.13 |
| SBS7d\_GRCh38 | 0.20 | 0.17 |
| SBS8\_GRCh38 | 0.53 | 0.52 |
| SBS9\_GRCh38 | 0.38 | 0.38 |
| SBS10a\_GRCh38 | 0.14 | 0.60 |
| SBS10b\_GRCh38 | 0.16 | 0.18 |
| SBS11\_GRCh38 | 0.36 | 0.22 |
| SBS12\_GRCh38 | 0.28 | 0.26 |
| SBS13\_GRCh38 | 0.16 | 0.05 |
| SBS14\_GRCh38 | 0.29 | 0.85 |
| SBS15\_GRCh38 | 0.32 | 0.19 |
| SBS16\_GRCh38 | 0.23 | 0.15 |
| SBS17a\_GRCh38 | 0.11 | 0.16 |
| SBS17b\_GRCh38 | 0.09 | 0.17 |
| SBS18\_GRCh38 | 0.68 | 0.57 |
| SBS19\_GRCh38 | 0.41 | 0.21 |
| SBS20\_GRCh38 | 0.34 | 0.66 |
| SBS21\_GRCh38 | 0.22 | 0.27 |
| SBS22\_GRCh38 | 0.09 | 0.11 |
| SBS23\_GRCh38 | 0.44 | 0.23 |
| SBS24\_GRCh38 | 0.70 | 0.34 |
| SBS25\_GRCh38 | 0.50 | 0.44 |
| SBS26\_GRCh38 | 0.28 | 0.30 |
| SBS28\_GRCh38 | 0.08 | 0.12 |
| SBS29\_GRCh38 | 0.71 | 0.45 |
| SBS30\_GRCh38 | 0.45 | 0.20 |
| SBS31\_GRCh37 | 0.52 | 0.35 |
| SBS32\_GRCh38 | 0.42 | 0.26 |
| SBS33\_GRCh38 | 0.18 | 0.21 |
| SBS34\_GRCh38 | 0.09 | 0.02 |
| SBS35\_GRCh38 | 0.50 | 0.57 |
| SBS36\_GRCh38 | 0.45 | 0.64 |
| SBS37\_GRCh38 | 0.30 | 0.25 |
| SBS38\_GRCh38 | 0.27 | 0.37 |
| SBS39\_GRCh38 | 0.50 | 0.23 |
| SBS40\_GRCh38 | 0.73 | 0.53 |
| SBS41\_GRCh38 | 0.28 | 0.18 |
| SBS42\_GRCh38 | 0.49 | 0.40 |
| SBS44\_GRCh38 | 0.42 | 0.50 |
| SBS84\_GRCh37 | 0.38 | 0.21 |
| SBS85\_GRCh37 | 0.21 | 0.15 |
| SBS86\_GRCh37 | 0.30 | 0.09 |
| SBS87\_GRCh37 | 0.32 | 0.12 |
| SBS88\_GRCh37 | 0.18 | 0.15 |
| SBS89\_GRCh37 | 0.57 | 0.43 |
| SBS90\_GRCh37 | 0.05 | 0.03 |
| SBS27\_GRCh38 | 0.12 | 0.07 |
| SBS43\_GRCh38 | 0.16 | 0.11 |
| SBS45\_GRCh38 | 0.31 | 0.53 |
| SBS46\_GRCh38 | 0.40 | 0.35 |
| SBS47\_GRCh38 | 0.24 | 0.11 |
| SBS48\_GRCh38 | 0.08 | 0.01 |
| SBS49\_GRCh38 | 0.26 | 0.10 |
| SBS50\_GRCh38 | 0.38 | 0.20 |
| SBS51\_GRCh38 | 0.35 | 0.14 |
| SBS52\_GRCh38 | 0.18 | 0.14 |
| SBS53\_GRCh38 | 0.29 | 0.09 |
| SBS54\_GRCh38 | 0.25 | 0.24 |
| SBS55\_GRCh38 | 0.12 | 0.08 |
| SBS56\_GRCh38 | 0.19 | 0.62 |
| SBS57\_GRCh38 | 0.28 | 0.22 |
| SBS58\_GRCh38 | 0.36 | 0.22 |
| SBS59\_GRCh38 | 0.33 | 0.17 |
| SBS60\_GRCh38 | 0.04 | 0.05 |