**Table 1S: Physicochemical properties of selected 81 EGCG analogs dataset.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Compound ID | MW (g/mol) | HBA | HBD | XLOGP3 | RB | TPSA (Å2) |
| \*65064 | 458.375 | 11 | 8 | 1.2 | 4 | 197 |
| 156194 | 394.379 | 7 | 4 | 2.6 | 4 | 116 |
| 156197 | 438.388 | 9 | 5 | 2.1 | 5 | 154 |
| 489304 | 302.282 | 6 | 3 | 2.5 | 3 | 96.2 |
| 5270719 | 334.28 | 8 | 5 | 1.8 | 3 | 137 |
| 5270720 | 318.281 | 7 | 4 | 2.1 | 3 | 116 |
| 5270721 | 318.281 | 7 | 4 | 2.1 | 3 | 116 |
| 5270723 | 318.281 | 7 | 4 | 2.1 | 3 | 116 |
| 5276404 | 362.334 | 8 | 3 | 2.4 | 5 | 115 |
| 9887768 | 410.378 | 8 | 5 | 2.2 | 4 | 137 |
| 10028202 | 482.485 | 9 | 4 | 4.3 | 6 | 135 |
| 10138907 | 452.459 | 8 | 2 | 4.3 | 7 | 104 |
| 10254663 | 482.485 | 9 | 4 | 4.3 | 6 | 135 |
| 10276794 | 468.458 | 9 | 3 | 3.9 | 7 | 124 |
| 10340587 | 394.379 | 7 | 4 | 3.6 | 4 | 116 |
| 10365017 | 424.405 | 8 | 4 | 3.6 | 5 | 126 |
| 10453226 | 394.379 | 7 | 4 | 2.6 | 4 | 116 |
| 10719151 | 470.43 | 10 | 5 | 2.2 | 6 | 155 |
| 10764037 | 410.378 | 8 | 5 | 2.2 | 4 | 137 |
| 11755557 | 496.512 | 9 | 3 | 4.6 | 7 | 124 |
| 15200433 | 410.378 | 8 | 5 | 3.3 | 4 | 137 |
| 21055410 | 482.485 | 9 | 4 | 4.3 | 6 | 135 |
| 21055416 | 482.485 | 9 | 4 | 4.3 | 6 | 135 |
| 21123477 | 438.388 | 9 | 5 | 2.1 | 5 | 154 |
| 22737159 | 378.38 | 6 | 3 | 4 | 4 | 96.2 |
| 23277060 | 394.379 | 7 | 4 | 2.6 | 4 | 116 |
| 24850659 | 484.457 | 10 | 4 | 2 | 7 | 144 |
| 24858664 | 470.43 | 10 | 5 | 2.2 | 6 | 155 |
| 24858665 | 470.43 | 10 | 5 | 2.2 | 6 | 155 |
| 24860160 | 484.457 | 10 | 4 | 2.5 | 7 | 144 |
| 25133184 | 410.378 | 8 | 5 | 3.3 | 4 | 137 |
| 25133522 | 410.378 | 8 | 5 | 3.3 | 4 | 137 |
| 44125478 | 470.43 | 10 | 5 | 2.2 | 6 | 155 |
| 44125590 | 470.43 | 10 | 5 | 2.2 | 6 | 155 |
| 44125591 | 484.457 | 10 | 4 | 2.5 | 7 | 144 |
| 44290967 | 438.432 | 8 | 5 | 3 | 5 | 137 |
| 44291017 | 424.405 | 8 | 5 | 2.6 | 4 | 137 |
| 44326782 | 394.379 | 7 | 4 | 3.6 | 4 | 116 |
| 44326803 | 424.405 | 8 | 4 | 3.6 | 5 | 126 |
| 44394558 | 484.457 | 10 | 4 | 2.5 | 7 | 144 |
| 54764512 | 410.378 | 8 | 5 | 3.3 | 4 | 137 |
| 54764513 | 378.38 | 6 | 3 | 4 | 4 | 96.2 |
| 54764514 | 378.38 | 6 | 3 | 4 | 4 | 96.2 |
| 56623587 | 440.404 | 9 | 5 | 2.2 | 5 | 146 |
| 58700131 | 496.512 | 9 | 3 | 4.6 | 7 | 124 |
| 58717500 | 480.469 | 9 | 4 | 3.8 | 6 | 143 |
| 59563102 | 484.457 | 10 | 4 | 2.5 | 7 | 144 |
| 59563103 | 454.431 | 9 | 5 | 2.6 | 5 | 146 |
| 67773925 | 410.378 | 8 | 5 | 2.2 | 4 | 137 |
| 68103282 | 498.484 | 10 | 4 | 3.9 | 7 | 144 |
| 69138977 | 410.378 | 8 | 5 | 2.2 | 4 | 137 |
| 69138980 | 410.378 | 8 | 5 | 2.2 | 4 | 137 |
| 69138985 | 410.378 | 8 | 5 | 2.2 | 4 | 137 |
| 72191288 | 482.485 | 9 | 2 | 4.2 | 8 | 113 |
| 72191601 | 482.485 | 9 | 2 | 4.2 | 8 | 113 |
| 72192817 | 346.335 | 7 | 2 | 2.8 | 5 | 94.4 |
| 76191279 | 410.378 | 8 | 5 | 3.3 | 4 | 137 |
| 78427567 | 378.38 | 6 | 3 | 4 | 4 | 96.2 |
| 87897815 | 410.378 | 8 | 5 | 3.3 | 4 | 137 |
| 87897818 | 410.378 | 8 | 5 | 3.3 | 4 | 137 |
| 87937497 | 424.361 | 9 | 5 | 2.5 | 4 | 154 |
| 88415337 | 410.378 | 8 | 5 | 3.3 | 4 | 137 |
| 88415340 | 410.378 | 8 | 5 | 3.3 | 4 | 137 |
| 88590543 | 470.43 | 10 | 5 | 2.2 | 6 | 155 |
| 88590544 | 440.404 | 9 | 5 | 3.3 | 5 | 146 |
| 88590573 | 442.42 | 9 | 5 | 3.3 | 5 | 146 |
| 88590574 | 472.446 | 10 | 5 | 2.9 | 6 | 155 |
| 89007789 | 334.28 | 8 | 5 | 1.8 | 3 | 137 |
| 90656416 | 428.368 | 9 | 5 | 2.3 | 4 | 137 |
| 90950326 | 470.43 | 10 | 5 | 1.9 | 6 | 155 |
| 91011818 | 346.335 | 7 | 4 | 2.9 | 3 | 116 |
| 91411631 | 466.486 | 8 | 4 | 4.7 | 5 | 126 |
| 101756585 | 470.43 | 10 | 5 | 2.2 | 6 | 155 |
| 102459380 | 428.368 | 9 | 5 | 2.3 | 4 | 137 |
| 102459381 | 428.368 | 9 | 5 | 2.3 | 4 | 137 |
| 118176081 | 454.431 | 9 | 5 | 2.6 | 5 | 146 |
| 118481832 | 378.38 | 6 | 3 | 4 | 4 | 96.2 |
| 122450369 | 378.38 | 6 | 3 | 4 | 4 | 96.2 |
| 123394746 | 444.392 | 10 | 5 | 1.5 | 4 | 171 |
| 123702734 | 440.404 | 9 | 5 | 3.3 | 5 | 146 |
| 124033519 | 470.43 | 10 | 5 | 2.2 | 6 | 155 |
| 124086159 | 450.443 | 8 | 5 | 4.4 | 6 | 137 |
| **MW: Molecular Weight; HBA: Hydrogen bond acceptor; HBD: Hydrogen bond donor; RB: Rotatable bonds; TPSA: Topological Polar Surface Area; \*:EGCG** | | | | | | |

**Table 2S: Predicted logP and logS parameters indicated significant applicability domain scores of dataset compounds.**

|  |  |  |  |
| --- | --- | --- | --- |
| Compound ID | logPo/w (in Log unit) | Aqueous Solubility in log(mol/L) | Applicability Domain |
| \*65064 | 2.38 | -3.8 | TRUE |
| 156194 | 3.23 | -4.55 | TRUE |
| 156197 | 3.4 | -4.48 | TRUE |
| 489304 | 2.1 | -3.46 | TRUE |
| 5270719 | 1.59 | -3.16 | TRUE |
| 5270720 | 2.14 | -3.35 | TRUE |
| 5270721 | 2.11 | -3.26 | TRUE |
| 5270723 | 1.96 | -3.27 | TRUE |
| 5276404 | 1.8 | -3.62 | TRUE |
| 9887768 | 3.04 | -4.26 | TRUE |
| 10028202 | 3.4 | -4.67 | TRUE |
| 10138907 | 3.57 | -4.73 | TRUE |
| 10254663 | 3.45 | -4.69 | TRUE |
| 10276794 | 3.3 | -4.57 | TRUE |
| 10340587 | 3.36 | -4.52 | TRUE |
| 10365017 | 3.38 | -4.58 | TRUE |
| 10453226 | 3.23 | -4.55 | TRUE |
| 10719151 | 3.14 | -4.42 | TRUE |
| 10764037 | 2.84 | -4.36 | TRUE |
| 11755557 | 3.58 | -4.78 | TRUE |
| 15200433 | 3.22 | -4.45 | TRUE |
| 21055410 | 3.4 | -4.67 | TRUE |
| 21055416 | 3.45 | -4.69 | TRUE |
| 21123477 | 3.4 | -4.48 | TRUE |
| 22737159 | 4.18 | -4.27 | TRUE |
| 23277060 | 3.23 | -4.55 | TRUE |
| 24850659 | 2.65 | -4.51 | TRUE |
| 24858664 | 3.14 | -4.42 | TRUE |
| 24858665 | 3.15 | -4.43 | TRUE |
| 24860160 | 3.11 | -4.52 | TRUE |
| 25133184 | 2.95 | -4.39 | TRUE |
| 25133522 | 2.95 | -4.39 | TRUE |
| 44125478 | 3.15 | -4.43 | TRUE |
| 44125590 | 3.15 | -4.43 | TRUE |
| 44125591 | 3.11 | -4.52 | TRUE |
| 44290967 | 3.53 | -4.71 | TRUE |
| 44291017 | 3.11 | -4.52 | TRUE |
| 44326782 | 3.36 | -4.52 | TRUE |
| 44326803 | 3.38 | -4.58 | TRUE |
| 44394558 | 3.11 | -4.52 | TRUE |
| 54764512 | 3.17 | -4.4 | TRUE |
| 54764513 | 4.18 | -4.27 | TRUE |
| 54764514 | 4.18 | -4.27 | TRUE |
| 56623587 | 3.09 | -4.44 | TRUE |
| 58700131 | 3.58 | -4.78 | TRUE |
| 58717500 | 3.86 | -4.8 | TRUE |
| 59563102 | 3.11 | -4.52 | TRUE |
| 59563103 | 3.19 | -4.59 | TRUE |
| 67773925 | 2.84 | -4.36 | TRUE |
| 68103282 | 3.2 | -4.47 | TRUE |
| 69138977 | 2.84 | -4.36 | TRUE |
| 69138980 | 2.84 | -4.36 | TRUE |
| 69138985 | 2.84 | -4.36 | TRUE |
| 72191288 | 3.49 | -4.72 | TRUE |
| 72191601 | 3.5 | -4.73 | TRUE |
| 72192817 | 2.04 | -3.72 | TRUE |
| 76191279 | 3.17 | -4.4 | TRUE |
| 78427567 | 4.18 | -4.27 | TRUE |
| 87897815 | 3.17 | -4.4 | TRUE |
| 87897818 | 3.17 | -4.4 | TRUE |
| 87937497 | 3.29 | -4.43 | TRUE |
| 88415337 | 3.17 | -4.4 | TRUE |
| 88415340 | 3.17 | -4.4 | TRUE |
| 88590543 | 3.11 | -4.47 | TRUE |
| 88590544 | 3.25 | -4.47 | TRUE |
| 88590573 | 3.1 | -4.32 | TRUE |
| 88590574 | 3.03 | -4.35 | TRUE |
| 89007789 | 1.59 | -3.16 | TRUE |
| 90656416 | 3.25 | -4.13 | TRUE |
| 90950326 | 3.1 | -4.51 | TRUE |
| 91011818 | 2.18 | -3.65 | TRUE |
| 91411631 | 3.74 | -4.86 | TRUE |
| 101756585 | 3.15 | -4.42 | TRUE |
| 102459380 | 3.27 | -4.09 | TRUE |
| 102459381 | 3.3 | -3.98 | TRUE |
| 118176081 | 3.19 | -4.59 | TRUE |
| 118481832 | 4.18 | -4.27 | TRUE |
| 122450369 | 4.18 | -4.27 | TRUE |
| 123394746 | 2.55 | -3.49 | TRUE |
| 123702734 | 3.25 | -4.47 | TRUE |
| 124033519 | 3.11 | -4.47 | TRUE |
| 124086159 | 3.81 | -4.21 | TRUE |

**Table 3S: Toxicity endpoint evaluations of dataset compounds**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Compound ID | Mutagenicity | | Carcinogenicity | | Developmental Toxicity | | Skin Sensitization | |
| Ass. | Pre. | Ass. | Pre. | Ass. | Pre. | Ass. | Pre. |
| \*65064 | 0c | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 156194 | 0a | 0 | 0c | 0 | 1a | 1 | 0c | 0 |
| 156197 | 0c | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 489304 | 0a | 0 | 1c | 1 | 0c | 0 | 1a | 1 |
| 5270719 | 1c | 1 | 0b | 0 | 1a | 1 | 1a | 1 |
| 5270720 | 0a | 0 | 0b | 0 | 0c | 0 | 1a | 1 |
| 5270721 | 0b | 0 | 0b | 0 | 0c | 0 | 1a | 1 |
| 5270723 | 0a | 0 | 0b | 0 | 0c | 0 | 1a | 1 |
| 5276404 | 0a | 0 | 0b | 0 | 1b | 1 | 1a | 1 |
| 9887768 | 0a | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| 10028202 | 0b | 0 | 0a | 0 | 1a | 1 | 0c | 0 |
| 10138907 | 0b | 0 | 0a | 0 | 1b | 1 | 0c | 0 |
| 10254663 | 0b | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| 10276794 | 0b | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 10340587 | 0a | 0 | 0c | 0 | 1a | 1 | 0c | 0 |
| 10365017 | 0a | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 10453226 | 0a | 0 | 0c | 0 | 1a | 1 | 0c | 0 |
| 10719151 | 0b | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 10764037 | 0a | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| 11755557 | 0b | 0 | 0a | 0 | 1a | 1 | 0c | 0 |
| 15200433 | 0b | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| 21055410 | 0b | 0 | 0a | 0 | 1a | 1 | 0c | 0 |
| 21055416 | 0b | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| 21123477 | 0c | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 22737159 | 0a | 0 | 0c | 0 | 1a | 1 | 0c | 0 |
| 23277060 | 0a | 0 | 0c | 0 | 1a | 1 | 0c | 0 |
| 24850659 | 0b | 0 | 0a | 0 | 1b | 1 | 0c | 0 |
| 24858664 | 0b | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 24858665 | 0c | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 24860160 | 0b | 0 | 0a | 0 | 1b | 1 | 0c | 0 |
| 25133184 | 0b | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| 25133522 | 0b | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| 44125478 | 0c | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 44125590 | 0c | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 44125591 | 0b | 0 | 0a | 0 | 1b | 1 | 0c | 0 |
| 44290967 | 0b | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 44291017 | 0b | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 44326782 | 0a | 0 | 0c | 0 | 1a | 1 | 0c | 0 |
| 44326803 | 0a | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 44394558 | 0b | 0 | 0a | 0 | 1b | 1 | 0c | 0 |
| 54764512 | 0a | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| 54764513 | 0a | 0 | 0c | 0 | 1a | 1 | 0c | 0 |
| 54764514 | 0a | 0 | 0c | 0 | 1a | 1 | 0c | 0 |
| 56623587 | 0b | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 58700131 | 0b | 0 | 0a | 0 | 1a | 1 | 0c | 0 |
| 58717500 | 0b | 0 | 0b | 0 | 1c | 1 | 0c | 0 |
| 59563102 | 0b | 0 | 0a | 0 | 1b | 1 | 0c | 0 |
| 59563103 | 0c | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 67773925 | 0a | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| 68103282 | 0b | 0 | 0a | 0 | 1a | 1 | 0c | 0 |
| 69138977 | 0a | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| 69138980 | 0a | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| 69138985 | 0a | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| 72191288 | 0b | 0 | 0a | 0 | 1b | 1 | 0c | 0 |
| 72191601 | 0b | 0 | 0a | 0 | 1a | 1 | 0c | 0 |
| 72192817 | 0a | 0 | 0c | 0 | 1a | 1 | 1a | 1 |
| 76191279 | 0a | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| 78427567 | 0a | 0 | 0c | 0 | 1a | 1 | 0c | 0 |
| 87897815 | 0a | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| 87897818 | 0a | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| 87937497 | 0c | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 88415337 | 0a | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| 88415340 | 0a | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| 88590543 | 0b | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 88590544 | 0b | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 88590573 | 0c | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 88590574 | 0c | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 89007789 | 1c | 1 | 0b | 0 | 1a | 1 | 1a | 1 |
| 90656416 | 0b | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 90950326 | 0b | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 91011818 | 0a | 0 | 0b | 0 | 1b | 1 | 1a | 1 |
| 91411631 | 0b | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| 101756585 | 0b | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 102459380 | 0b | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 102459381 | 0b | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 118176081 | 0c | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 118481832 | 0a | 0 | 0c | 0 | 1a | 1 | 0c | 0 |
| 122450369 | 0a | 0 | 0c | 0 | 1a | 1 | 0c | 0 |
| 123394746 | 1b | 1 | 0b | 0 | 1a | 1 | 0c | 0 |
| 123702734 | 0b | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 124033519 | 0b | 0 | 0b | 0 | 1b | 1 | 0c | 0 |
| 124086159 | 0c | 0 | 0b | 0 | 1a | 1 | 0c | 0 |
| **Ass. = Assessment, pre. = prediction, 0=non-toxic, 1=toxic,**  **aThe predicted compound is outside the Applicability Domain of the model (low reliability)**  **bThe predicted compound could be out of the Applicability Domain of the model (moderate reliability)**  **cThe predicted compound is into the Applicability Domain of the model (good reliability)** | | | | | | | | |

**Table 4S: AutoDock binding energies of the defined molecular data set compounds**

|  |  |  |
| --- | --- | --- |
| Rank | Compound ID | *ΔG*binding Energy kcal/mol |
| \* | 65064\_uff\_E=325.39 | -9.3 |
| 1 | 156197\_uff\_E=426.96 | -10.6 |
| 2 | 21123477\_uff\_E=426.96 | -10.6 |
| 3 | 102459380\_uff\_E=406.38 | -10 |
| 4 | 10453226\_uff\_E=321.97 | -10 |
| 5 | 23277060\_uff\_E=320.02 | -10 |
| 6 | 91411631\_uff\_E=496.86 | -10 |
| 7 | 9887768\_uff\_E=398.82 | -10 |
| 8 | 87937497\_uff\_E=353.40 | -9.9 |
| 9 | 90656416\_uff\_E=362.34 | -9.9 |
| 10 | 102459381\_uff\_E=682.90 | -9.8 |
| 11 | 90950326\_uff\_E=460.75 | -9.8 |
| 12 | 118176081\_uff\_E=565.96 | -9.7 |
| 13 | 44326782\_uff\_E=331.04 | -9.7 |
| 14 | 76191279\_uff\_E=433.08 | -9.7 |
| 15 | 87897815\_uff\_E=450.41 | -9.7 |
| 16 | 87897818\_uff\_E=450.41 | -9.7 |
| 17 | 88415337\_uff\_E=418.81 | -9.7 |
| 18 | 123394746\_uff\_E=468.69 | -9.6 |
| 19 | 15200433\_uff\_E=321.01 | -9.6 |
| 20 | 54764512\_uff\_E=424.65 | -9.6 |
| 21 | 58717500\_uff\_E=624.32 | -9.6 |
| 22 | 122450369\_uff\_E=337.97 | -9.5 |
| 23 | 21055416\_uff\_E=532.82 | -9.5 |
| 24 | 22737159\_uff\_E=332.25 | -9.5 |
| 25 | 44291017\_uff\_E=602.64 | -9.5 |
| 26 | 5270721\_uff\_E=225.68 | -9.5 |
| 27 | 69138977\_uff\_E=317.96 | -9.5 |
| 28 | 72192817\_uff\_E=259.51 | -9.5 |
| 29 | 118481832\_uff\_E=336.04 | -9.4 |
| 30 | 489304\_uff\_E=248.00 | -9.4 |
| 31 | 5270720\_uff\_E=241.31 | -9.4 |
| 32 | 5276404\_uff\_E=295.60 | -9.4 |
| 33 | 54764513\_uff\_E=318.15 | -9.4 |
| 34 | 54764514\_uff\_E=318.27 | -9.4 |
| 35 | 88415340\_uff\_E=419.29 | -9.4 |
| 36 | 10340587\_uff\_E=362.87 | -9.3 |
| 37 | 124086159\_uff\_E=503.50 | -9.3 |
| 38 | 24860160\_uff\_E=572.06 | -9.3 |
| 39 | 44125591\_uff\_E=572.06 | -9.3 |
| 40 | 5270723\_uff\_E=225.07 | -9.3 |
| 41 | 59563102\_uff\_E=572.06 | -9.3 |
| 42 | 10138907\_uff\_E=524.46 | -9.2 |
| 43 | 10365017\_uff\_E=339.90 | -9.2 |
| 44 | 11755557\_uff\_E=559.19 | -9.2 |
| 45 | 44125478\_uff\_E=486.04 | -9.2 |
| 46 | 44125590\_uff\_E=486.11 | -9.2 |
| 47 | 5270719\_uff\_E=263.22 | -9.2 |
| 48 | 59563103\_uff\_E=435.44 | -9.2 |
| 49 | 78427567\_uff\_E=318.19 | -9.2 |
| 50 | 89007789\_uff\_E=263.22 | -9.2 |
| 51 | 10719151\_uff\_E=429.19 | -9.1 |
| 52 | 124033519\_uff\_E=409.25 | -9.1 |
| 53 | 25133522\_uff\_E=328.14 | -9.1 |
| 54 | 44290967\_uff\_E=360.91 | -9.1 |
| 55 | 44326803\_uff\_E=558.07 | -9.1 |
| 56 | 69138980\_uff\_E=316.41 | -9.1 |
| 57 | 88590573\_uff\_E=463.52 | -9.1 |
| 58 | 101756585\_uff\_E=434.15 | -9 |
| 59 | 10764037\_uff\_E=317.26 | -9 |
| 60 | 123702734\_uff\_E=372.95 | -9 |
| 61 | 156194\_uff\_E=314.20 | -9 |
| 62 | 25133184\_uff\_E=336.97 | -9 |
| 63 | 56623587\_uff\_E=374.11 | -9 |
| 64 | 67773925\_uff\_E=317.35 | -9 |
| 65 | 69138985\_uff\_E=316.41 | -9 |
| 66 | 88590544\_uff\_E=351.42 | -8.9 |
| 67 | 88590574\_uff\_E=571.45 | -8.9 |
| 68 | 44394558\_uff\_E=572.06 | -8.8 |
| 69 | 68103282\_uff\_E=614.62 | -8.8 |
| 70 | 10028202\_uff\_E=544.26 | -8.7 |
| 71 | 10254663\_uff\_E=545.76 | -8.7 |
| 72 | 88590543\_uff\_E=411.74 | -8.7 |
| 73 | 91011818\_uff\_E=319.77 | -8.7 |
| 74 | 10276794\_uff\_E=431.55 | -8.6 |
| 75 | 21055410\_uff\_E=608.71 | -8.6 |
| 76 | 24850659\_uff\_E=689.63 | -8.6 |
| 77 | 72191288\_uff\_E=509.26 | -8.6 |
| 78 | 58700131\_uff\_E=681.79 | -8.5 |
| 79 | 24858664\_uff\_E=473.47 | -8.3 |
| 80 | 24858665\_uff\_E=486.11 | -8.3 |
| 81 | 72191601\_uff\_E=599.23 | -7.9 |

**Table 5S:** **Predicted hydrogen bonds, hydrophobic interactions, π-cation interactions and salt bridges of functional residues were analyzed from the clustered network of EGFR-EGCG analogs (Fig. 4A and B) by using protein-ligand interaction profiler tool.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Hydrophobic Interactions** | | | | | | | |
| **Index** | **Residue** | **AA** | **Distance** | **Ligand Atom** | **Protein Atom** |  |  |
| 1 | 718A | LEU | 3.73 | 2563 | 136 |  |  |
| **Hydrogen Bonds** | | | | | | | |
| **Index** | **Residue** | **AA** | **Distance H-A** | **Distance D-A** | **Donor Angle** | **Donor Atom** | **Acceptor Atom** |
| 1 | 718A | LEU | 2.77 | 3.42 | 124.92 | 2289 [O3] | 135 [O2] |
| 2 | 719A | GLY | 3.08 | 4.03 | 165.06 | 2292 [O3] | 143 [O2] |
| 3 | 719A | GLY | 2.97 | 3.61 | 124.03 | 2798 [O3] | 143 [O2] |
| 4 | 720A | SER | 3.03 | 3.39 | 103.57 | 2296 [O3] | 147 [O2] |
| 5 | 743A | ALA | 2.79 | 3.67 | 150.57 | 2650 [O3] | 292 [O2] |
| 6 | 744A | ILE | 3.16 | 4.08 | 160.3 | 2796 [O3] | 297 [O2] |
| 7 | 745A | LYS | 2.99 | 3.53 | 115.67 | 302 [Nam] | 2831 [O3] |
| 8 | 745A | LYS | 2.13 | 2.87 | 132.2 | 2435 [O3] | 310 [N3] |
| 9 | 745A | LYS | 2.73 | 3.34 | 118.31 | 310 [N3] | 2470 [O3] |
| 10 | 745A | LYS | 2.41 | 3.36 | 170.06 | 2400 [O3] | 310 [N3] |
| 11 | 775A | CYS | 2.15 | 2.94 | 138.57 | 2687 [O3] | 493 [O2] |
| 12 | 776A | ARG | 2.25 | 2.87 | 120.66 | 2689 [O3] | 499 [O2] |
| 13 | 788A | LEU | 2.33 | 2.87 | 114.81 | 2333 [O.co2] | 588 [O2] |
| 14 | 788A | LEU | 3.19 | 3.83 | 125.45 | 2290 [O3] | 588 [O2] |
| 15 | 788A | LEU | 3.03 | 3.59 | 118.56 | 2579 [O3] | 588 [O2] |
| 16 | 790A | THR | 2.09 | 2.8 | 128 | 607 [O3] | 2689 [O3] |
| 17 | 790A | THR | 3.69 | 4.05 | 104.86 | 601 [Nam] | 2333 [O.co2] |
| 18 | 791A | GLN | 2.3 | 2.98 | 125.85 | 2728 [O3] | 611 [O2] |
| 19 | 791A | GLN | 3.26 | 3.57 | 100.73 | 2580 [O3] | 611 [O2] |
| 20 | 791A | GLN | 3.05 | 3.55 | 113.37 | 2433 [O3] | 611 [O2] |
| 21 | 791A | GLN | 3.27 | 3.69 | 108.11 | 2761 [O3] | 611 [O2] |
| 22 | 791A | GLN | 3.32 | 3.85 | 115.7 | 2328 [O3] | 611 [O2] |
| 23 | 791A | GLN | 3.55 | 3.95 | 107.7 | 2365 [O3] | 611 [O2] |
| 24 | 791A | GLN | 3.66 | 4.02 | 104.54 | 2614 [O3] | 611 [O2] |
| 25 | 791A | GLN | 3.39 | 3.96 | 119.56 | 2398 [O3] | 611 [O2] |
| 26 | 791A | GLN | 3.68 | 3.97 | 100.29 | 2468 [O3] | 611 [O2] |
| 27 | 793A | MET | 1.71 | 2.5 | 135.94 | 2434 [O3] | 628 [O2] |
| 28 | 793A | MET | 1.99 | 2.65 | 123.49 | 2329 [O3] | 628 [O2] |
| 29 | 793A | MET | 2.04 | 2.87 | 142.76 | 2399 [O3] | 628 [O2] |
| 30 | 793A | MET | 2.38 | 3.35 | 168.32 | 625 [Nam] | 2614 [O3] |
| 31 | 797A | CYS | 3.29 | 3.67 | 105.25 | 655 [Nam] | 2652 [O3] |
| 32 | 800A | ASP | 2.42 | 3.07 | 124.24 | 2730 [O3] | 684 [O3] |
| 33 | 841A | ARG | 1.84 | 2.74 | 154.58 | 2295 [O3] | 1021 [O2] |
| 34 | 841A | ARG | 2.76 | 3.22 | 109.41 | 2729 [O3] | 1021 [O2] |
| 35 | 841A | ARG | 3 | 3.95 | 166.32 | 2506 [O3] | 1025 [Ng+] |
| 36 | 842A | ASN | 2.47 | 3.32 | 145.74 | 2832 [O3] | 1036 [O2] |
| 37 | 842A | ASN | 2.3 | 2.95 | 124.18 | 2797 [O3] | 1036 [O2] |
| 38 | 842A | ASN | 3.19 | 3.84 | 125.9 | 2367 [O3] | 1036 [O2] |
| 39 | 842A | ASN | 3.22 | 3.75 | 116.44 | 2616 [O3] | 1036 [O2] |
| 40 | 842A | ASN | 3.55 | 4.06 | 114.47 | 1035 [Nam] | 2507 [O3] |
| 41 | 854A | THR | 2.3 | 3.22 | 158.76 | 1131 [O3] | 2609 [O2] |
| 42 | 855A | ASP | 2.77 | 3.69 | 156.62 | 1132 [Nam] | 2437 [O.co2] |
| 43 | 855A | ASP | 2.5 | 2.92 | 106.39 | 2830 [O3] | 1138 [O3] |
| 44 | 855A | ASP | 2.34 | 2.78 | 106.9 | 2438 [O.co2] | 1138 [O3] |
| 45 | 856A | PHE | 2.75 | 3.21 | 109.16 | 1140 [Nam] | 2688 [O3] |
| 46 | 856A | PHE | 2.46 | 2.84 | 102.82 | 2688 [O3] | 1143 [O2] |
| **π-Cation Interactions** | | | | | | | |
| **Index** | **Residue** | **AA** | **Distance** | **Offset** | **Ligand Group** | **Ligand Atoms** |  |
| 1 | 745A | LYS | 4.6 | 1.65 | Aromatic | 2621, 2624, 2625, 2633, 2634, 2635 |  |
| 2 | 745A | LYS | 4.61 | 1.33 | Aromatic | 2297, 2298, 2301, 2302, 2306, 2307 |  |
| 3 | 745A | LYS | 4.41 | 1.87 | Aromatic | 2551, 2552, 2553, 2561, 2562, 2564 |  |
| **Salt Bridges** | | | | | | | |
| **Index** | **Residue** | **AA** | **Distance** | **Ligand Group** | **Ligand Atoms** |  |  |
| 1 | 745A | LYS | 3.82 | Carboxylate | 2721, 2723 |  |  |

**Table 6S: Possible hydrogen bond interactions of the best potential AutoDock compounds were predicted by using protein-ligand interaction profiler tool.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Rank | PubChem ID | Binding energy kcal/mol | Protein:::Ligand interactions | Distance (Å)b | Angle (º)c |
| \* | 65064 | -9.3 | LEU718COa::OCd | 3.42 | 124.92 |
| GLY719COa::OHd | 4.03 | 165.06 |
| SER720COa::OHd | 3.39 | 103.57 |
| LEU788COa::OHd | 3.83 | 125.45 |
| ARG841COa::OHd | 2.74 | 154.58 |
| R1 | 156197 | -10.6 | LYS745Nd::OHa | 3.12 | 108.22 |
| LYS745NZd::OCa | 3.12 | 111.2 |
| LEU788COa::OHd | 2.87 | 114.81 |
| THR790Nd::OHa | 4.05 | 104.86 |
| GLN791COa::OHd | 3.85 | 115.7 |
| MET793COa::OHd | 2.65 | 123.49 |
| MET793Nd::OHa | 2.65 | 165.72 |
| THR854OG1d::OCa | 3.09 | 151.71 |
| R2 | 21123477 | -10.6 | LYS745NZa::OHd | 2.87 | 106.79 |
| GLN791COa::OHd | 3.55 | 113.37 |
| MET793Nd::OHa | 3.06 | 163.82 |
| MET793COa::OHd | 2.5 | 135.94 |
| THR854OG1d::OCa | 4.03 | 134.31 |
| ASP855Nd::OCa | 3.69 | 156.62 |
| ASP855OD1a::OCd | 2.78 | 106.9 |
| R3 | 102459380 | -10 | - | - | - |
| R4 | 10453226 | -10 | LYS745NZa::OHd | 3.36 | 118.27 |
| GLN791COa::OHd | 3.96 | 119.56 |
| MET793Nd::OHa | 2.87 | 142.76 |
| MET793COa::OHd | 3.82 | 164.05 |
| THR854OG1d::OCa | 3.01 | 105.68 |
| ASP855Nd::OCa | 3.85 | 105.91 |
| R5 | 23277060 | -10 | LYS745NZd::OHa | 3.34 | 118.31 |
| GLN791COa::OHd | 3.97 | 100.29 |
| MET793Nd::OHa | 3.82 | 164.1 |
| THR854OG1d::OCa | 3.02 | 105.98 |
| ASP855Nd::OCa | 3.87 | 106.14 |
| R6 | 91411631 | -10 | ARG841NEa::OHd | 3.95 | 166.32 |
| ASN842ND2d::OHa | 4.06 | 114.47 |
| THR854OG1d::OCa | 4.04 | 108.62 |
| R7 | 9887768 | -10 | LYS745NZd::OCa | 2.91 | 110.65 |
| GLN791COa::OHd | 3.95 | 107.7 |
| MET793Nd::OHa | 3.39 | 167.66 |
| ASN842OD1a::OHd | 3.84 | 125.9 |
| THR854OG1d::OCa | 3.08 | 152.02 |
| **a: hydrogen bond acceptor; d: hydrogen bond donor; b: bond distance between donor to acceptor; c: bond angle between donor, acceptor and hydrogen atoms** | | | | | |