

Table S1. Prediction probability of tyrosinase inhibitory activity of abalone peptides by KNN and RF-based predictors (Modified from Kongsompong et al., 2021)

| No | Peptide sequence | Prediction probability | |
|----|---------------------------------------|------------------------|--------------|
| | | kNN predictor | RF predictor |
| 1 | TASSDAWYR | 0.97 | 0.71 |
| 2 | SAPFMPDAFFRNV | 0.79 | 0.54 |
| 3 | SAPTFFR | 0.00 | 0.63 |
| 4 | NSSLRVQSR | 0.00 | 0.60 |
| 5 | SQSNRSVSR | 0.00 | 0.52 |
| 6 | SALDSL | 0.00 | 0.51 |
| 7 | NICECMK | 1.00 | 0.39 |
| 8 | TSQMSRSSR | 1.00 | 0.37 |
| 9 | KKNYRVSEAYK | 1.00 | 0.32 |
| 10 | SASCSQRSRSRER | 1.00 | 0.10 |
| 11 | ASRSGSSRRK | 1.00 | 0.10 |
| 12 | RGNEMCKK | 1.00 | 0.08 |
| 13 | GGEKGKGRGGERGGR | 1.00 | 0.07 |
| 14 | QFVRNGFEHWGSDHQGVETTRRFLLEMLSFHR | 1.00 | 0.06 |
| 15 | NPRYYQGGEDEGSFR | 1.00 | 0.06 |
| 16 | VPTNSSNCNCRNPNTCEVEGNCKMK | 1.00 | 0.06 |
| 17 | SIPCALK | 1.00 | 0.06 |
| 18 | MGLAIQSLAELLIVR | 1.00 | 0.06 |
| 19 | ICAEKKVGSACK | 1.00 | 0.05 |
| 20 | YFFIFYLCK | 1.00 | 0.05 |
| 21 | DKLLEFLPAMTRNLSFYDVAEITK | 1.00 | 0.04 |
| 22 | SRSSSRSSGK | 1.00 | 0.04 |
| 23 | ELINEILSDTKFLAAIQEHNPEFFVVDNFMYIRNILV | 1.00 | 0.03 |
| 24 | LACKKIMEDR | 1.00 | 0.03 |
| 25 | SNSPTNMSK | 1.00 | 0.03 |
| 26 | SRSKSGRSR | 1.00 | 0.03 |
| 27 | MGRFFMSLLSMLLVSCQVASFTISR | 1.00 | 0.03 |
| 28 | YFSLASDQGSVDGQLQLGIMYFSGNGVRKDYKMA | 1.00 | 0.03 |
| 29 | ILKCVGEKMCVEVR | 1.00 | 0.03 |
| 30 | SYTHAKAGTLLCGFIKLLPMFLLVFPGMIAR | 1.00 | 0.02 |
| 31 | DCVTLTKAVMKARDACR | 1.00 | 0.02 |
| 32 | PELCEDR | 1.00 | 0.02 |
| 33 | PTRASSLSSVNSQNMK | 1.00 | 0.02 |
| 34 | LCDALDVFAK | 1.00 | 0.01 |
| 35 | NVLTNFYVK | 1.00 | 0.01 |
| 36 | ETERQTKRQHTTSHAHVCMFECTNVCK | 1.00 | 0.01 |
| 37 | REQNGQGDLVNNAYSAVXAIFDNLGKK | 1.00 | 0.01 |
| 38 | CSDACACGKQCTEPK | 1.00 | 0.01 |
| 39 | PDKGQFPDAGNEDPIWR | 1.00 | 0.01 |
| 40 | PDTSTPDSGEEMDPAR | 1.00 | 0.01 |
| 41 | RQSVFYASKGK | 1.00 | 0.01 |
| 42 | DALPWMHGDALMSALK | 1.00 | 0.01 |
| 43 | MDFYEIHNM | 1.00 | 0.01 |

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| 44 | GGYSGPTCKVNVCK | 1.00 | 0.01 |
| 45 | DAEDATKALDGTR | 1.00 | 0.01 |
| 46 | EASLQLKMQTITKFECNSDSCNNR | 1.00 | 0.01 |
| 47 | CDMENAK | 1.00 | 0.00 |
| 48 | KALSGACDALMCK | 1.00 | 0.00 |
| 49 | LSVVSDASSNTTSGIVSDRMTVSLMMEMIIAER | 1.00 | 0.00 |
| 50 | TGTFTALDALYK | 1.00 | 0.00 |
| 51 | DRVNALIDLTDALK | 1.00 | 0.00 |
| 52 | SHFPDIVPDGRPKKSK | 1.00 | 0.00 |
| 53 | MSTLSDMTCR | 1.00 | 0.00 |
| 54 | ACACGAENCSGFLGVR | 1.00 | 0.00 |
| 55 | NGLMMYTVNHEITNVASENSDNLK | 1.00 | 0.00 |
| 56 | CQVTDCK | 1.00 | 0.00 |
| 57 | SPLQNVYLPYVQRLVEVKLRIGHAMAR | 1.00 | 0.00 |
| 58 | ATVRPDAGQMRVFGK | 1.00 | 0.00 |
| 59 | NYPNAYDVR | 1.00 | 0.00 |
| 60 | LMNSLKDTNSPK | 1.00 | 0.00 |
| 61 | TQCIDVDMCKGNPCTDGCVETEEGTGFLCTCPGK | 1.00 | 0.00 |
| 62 | SSSVNLTKDNLKNMVNAPR | 1.00 | 0.00 |
| 63 | KDYQPYDRKDYQTPDR | 1.00 | 0.00 |
| 64 | HACLSGARCLMEMNKYK | 1.00 | 0.00 |
| 65 | VTCLNIACK | 1.00 | 0.12 |
| 66 | PFECMCKK | 1.00 | 0.32 |
| 67 | DCVIACMK | 1.00 | 0.30 |
| 68 | EADMCKK | 1.00 | 0.35 |
| 69 | QYHCEICGNSFSR | 1.00 | 0.24 |
| 70 | IGCVSMFSSR | 0.99 | 0.02 |
| 71 | PTKAMCNLR | 0.99 | 0.00 |
| 72 | KCWSSLFTDR | 0.99 | 0.03 |
| 73 | WSTDLCR | 0.99 | 0.00 |
| 74 | KGICKSR | 0.99 | 0.13 |
| 75 | TSSQMCK | 0.99 | 0.41 |
| 76 | INTAAMCK | 0.99 | 0.03 |
| 77 | TRVLCMK | 0.99 | 0.13 |
| 78 | TNCHIMSEK | 0.99 | 0.14 |
| 79 | LNCHHKVCPR | 0.99 | 0.01 |
| 80 | IFCNFSICDK | 0.99 | 0.03 |
| 81 | MTCLRCK | 0.99 | 0.00 |
| 82 | LICELSQTHR | 0.99 | 0.01 |
| 83 | MCPSNTQAVSTMTR | 0.99 | 0.00 |
| 84 | ALMVNPdffQELIFYKK | 0.99 | 0.01 |
| 85 | NCGAEHK | 0.99 | 0.02 |
| 86 | ERMSCAMKDYPESCAVLVRR | 0.99 | 0.01 |
| 87 | TQWSNCPTIK | 0.99 | 0.00 |
| 88 | MSMHTDGCGR | 0.99 | 0.06 |
| 89 | VSTFNNCEDASK | 0.99 | 0.00 |
| 90 | LSSKDDCALR | 0.99 | 0.02 |

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| 91 | MDCMNHK | 0.99 | 0.06 |
| 92 | NSLTEIHSCQR | 0.99 | 0.01 |
| 93 | EFCCNCGTVADR | 0.99 | 0.07 |
| 94 | MIPCSYK | 0.99 | 0.05 |
| 95 | SEANKCCAMR | 0.99 | 0.07 |
| 96 | VICINMLTFSR | 0.99 | 0.05 |
| 97 | VSICGGCNAMR | 0.99 | 0.02 |
| 98 | LASAVCSCR | 0.99 | 0.01 |
| 99 | EEICSCGK | 0.99 | 0.01 |
| 100 | YGNSCADNCSR | 0.99 | 0.04 |
| 101 | RQRYKGSLGASYK | 0.99 | 0.00 |
| 102 | EAYKSQMTPGSADVAKVTGQYK | 0.99 | 0.00 |
| 103 | KTRGAYK | 0.99 | 0.00 |
| 104 | RCQINCSIKSLDPLYKDMDAYK | 0.99 | 0.00 |
| 105 | MGSGGSKTPPSQQAVPDK | 0.99 | 0.00 |
| 106 | LSCRLLQCGDCK | 0.99 | 0.01 |
| 107 | SNNSSRSTMLSNSTVNSNMSSRNNSGRSR | 0.99 | 0.03 |
| 108 | NRVALSNMPVK | 0.99 | 0.02 |
| 109 | PLFRYTHLDKVECR | 0.99 | 0.07 |
| 110 | ECRYRVLAREVEAIG | 0.99 | 0.02 |
| 111 | SVIKKKYGDACNVGDEGGFAPNIQDNK | 0.99 | 0.05 |
| 112 | SIGKMICNK | 0.99 | 0.01 |
| 113 | LEENGVPVDLQTHEKGIEFNGTNAISK | 0.99 | 0.01 |
| 114 | RAQLRAAR | 0.99 | 0.00 |
| 115 | TLKDKADDPAMSIDYK | 0.99 | 0.01 |
| 116 | ELMKDYKNEVKDILAADK | 0.99 | 0.00 |
| 117 | TEKDYNIFNDLK | 0.99 | 0.00 |
| 118 | NIQKGDYNMVINDYEKAK | 0.99 | 0.00 |
| 119 | DYLATGSADY | 0.99 | 0.00 |
| 120 | NAYSADYMDYFQPK | 0.99 | 0.00 |
| 121 | IGIHCEWR | 0.99 | 0.21 |
| 122 | MPSRVVCFVCGNIGADLPLNIK | 0.99 | 0.00 |
| 123 | NHFHTVGPRTTNHVEGWHARMNK | 0.99 | 0.01 |
| 124 | SKKIYCLK | 0.99 | 0.00 |
| 125 | IVSSVSVR | 0.99 | 0.40 |
| 126 | GEGGGEGDEGDQR | 0.99 | 0.05 |
| 127 | MFNNGISFYGDFK | 0.99 | 0.01 |
| 128 | VSKSEPGVGDGSVSETMNSVTGSK | 0.99 | 0.00 |
| 129 | ASVSDPGVSEMK | 0.99 | 0.00 |
| 130 | RTLDRLRVQCR | 0.99 | 0.00 |
| 131 | MMNGSTHSRTNSWR | 0.99 | 0.03 |
| 132 | PIMQLSCSYK | 0.99 | 0.00 |
| 133 | LLPDNCSTANVSYK | 0.99 | 0.01 |
| 134 | PDSNDGNSDR | 0.99 | 0.02 |
| 135 | SMNCTLGK | 0.99 | 0.02 |
| 136 | ALGTELMCR | 0.99 | 0.02 |
| 137 | LKIPDSPKEMK | 0.99 | 0.00 |

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| 138 | SPVCLAKVDK | 0.99 | 0.01 |
| 139 | GKGDTCCL | 0.99 | 0.00 |
| 140 | QCELSIGDGSVICRKK | 0.99 | 0.01 |
| 141 | GPESLSFITEYQKLEKERNMDLNNLR | 0.99 | 0.02 |
| 142 | DPRMRQLCIK | 0.99 | 0.00 |
| 143 | LASDCTDKKMR | 0.99 | 0.03 |
| 144 | KTHMQSSLCEK | 0.99 | 0.01 |
| 145 | CPLRWYMLSSK | 0.99 | 0.28 |
| 146 | MLLILAMVLMSTETDAVPLTK | 0.99 | 0.05 |
| 147 | VSQEQEHFLLNPFGLTYSEVSASSLVK | 0.99 | 0.02 |
| 148 | CGICGKAFFSDGSNLIAHKK | 0.99 | 0.01 |
| 149 | LVLVKGKISSILLDMCEE | 0.99 | 0.01 |
| 150 | GANPDCR | 0.99 | 0.00 |
| 151 | LLADSNDCK | 0.99 | 0.28 |
| 152 | CISIALR | 0.99 | 0.07 |
| 153 | FTAGDCKK | 0.99 | 0.05 |
| 154 | SLFDSHNAFCRIAK | 0.99 | 0.00 |
| 155 | LTACRMGTEESR | 0.98 | 0.00 |
| 156 | CDIDHCISIK | 0.98 | 0.13 |
| 157 | CADMCSLSR | 0.98 | 0.01 |
| 158 | SSKHSSR | 0.98 | 0.03 |
| 159 | MTLGCGSRKGGFLSHSR | 0.98 | 0.00 |
| 160 | NYHLKMHSLTHSGLK | 0.98 | 0.00 |
| 161 | VSQVMKMYEDCLK | 0.98 | 0.00 |
| 162 | NFIMSGSTATCGCR | 0.98 | 0.02 |
| 163 | SASSCGK | 0.98 | 0.02 |
| 164 | MHTGENSLDCEICGK | 0.98 | 0.01 |
| 165 | PLETVLGR | 0.98 | 0.19 |
| 166 | IISLTPLGR | 0.98 | 0.09 |
| 167 | MSIPLGSLGFMK | 0.98 | 0.09 |
| 168 | LSKVYQVYKRGMALCGGELK | 0.98 | 0.02 |
| 169 | KVYKEIEEVVGTER | 0.98 | 0.02 |
| 170 | YSCSHNSK | 0.98 | 0.01 |
| 171 | RKAFCEK | 0.98 | 0.07 |
| 172 | MFCMTDDR | 0.98 | 0.02 |
| 173 | KTVEACIK | 0.98 | 0.00 |
| 174 | SQINKVARDLNLEANK | 0.98 | 0.02 |
| 175 | NEKNTHVICMTNYSLIMNRLTK | 0.98 | 0.01 |
| 176 | DSREMRSDTCFTNR | 0.98 | 0.01 |
| 177 | LNMMNXKPLLPGVFYG | 0.98 | 0.01 |
| 178 | QPVEDPFIWIGQTFSTLYFMYFMLSPISSK | 0.98 | 0.00 |
| 179 | LAECVDSTPR | 0.98 | 0.03 |
| 180 | KGYRCHCGK | 0.98 | 0.13 |
| 181 | NGCLCCSVK | 0.98 | 0.03 |
| 182 | RAGNQCLK | 0.98 | 0.01 |
| 183 | MDPLIARCCK | 0.98 | 0.15 |
| 184 | SDALDMR | 0.98 | 0.04 |

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| 185 | DAALHMK | 0.98 | 0.00 |
| 186 | DAALHMK | 0.98 | 0.00 |
| 187 | EMALVSEQREADALEFKR | 0.98 | 0.00 |
| 188 | KCLKICSPHR | 0.98 | 0.01 |
| 189 | QMIMKIHLAYLQHYEHIYEQSATNPVQCLSLIK | 0.98 | 0.00 |
| 190 | QCQPMDYSDPNALR | 0.98 | 0.01 |
| 191 | IMGNRQHHCR | 0.98 | 0.12 |
| 192 | LTSALCQSFQRQMPDIGR | 0.98 | 0.01 |
| 193 | TWFQMCCQDISSAVR | 0.98 | 0.13 |
| 194 | CRHHDVHECKKMAEK | 0.98 | 0.05 |
| 195 | GIANCNAESSK | 0.98 | 0.00 |
| 196 | PAETNRRKTCNEVMK | 0.98 | 0.00 |
| 197 | TITYKVHSMESR | 0.98 | 0.01 |
| 198 | SVNHERMKQCLIK | 0.98 | 0.00 |
| 199 | METKTEGLCTR | 0.98 | 0.00 |
| 200 | MMKMSKVIQDKICYR | 0.98 | 0.00 |
| 201 | VRNLMLCK | 0.98 | 0.07 |
| 202 | PGNYCRR | 0.98 | 0.02 |
| 203 | MIYCHLGIGK | 0.98 | 0.01 |
| 204 | KARQSCRFDSSIGK | 0.98 | 0.02 |
| 205 | SMLCLDSNSVSEK | 0.98 | 0.06 |
| 206 | LCLAQISNTLLK | 0.98 | 0.02 |
| 207 | YTPCGLAWR | 0.98 | 0.05 |
| 208 | VCHPNVAKR | 0.98 | 0.02 |
| 209 | MLPNYCIK | 0.98 | 0.01 |
| 210 | LSCKSMGAAKYR | 0.98 | 0.00 |
| 211 | GAECKCPRGQALNGTK | 0.98 | 0.01 |
| 212 | RSHTIDNCLK | 0.98 | 0.01 |
| 213 | SAQSLVDCK | 0.98 | 0.22 |
| 214 | HMPMNSGCRKGK | 0.98 | 0.01 |
| 215 | AFCLPTVSGK | 0.98 | 0.00 |
| 216 | PCFWLKHNMESDSYK | 0.98 | 0.02 |
| 217 | CMHNGQERQGIFRTECNICVCLK | 0.98 | 0.02 |
| 218 | QMMCSASDDR | 0.98 | 0.00 |
| 219 | LGISCAK | 0.98 | 0.04 |
| 220 | GHENNCPMLQSSTK | 0.98 | 0.00 |
| 221 | GCGSNGR | 0.98 | 0.05 |
| 222 | MFCADHK | 0.98 | 0.05 |
| 223 | SPAKSCEKTLTR | 0.98 | 0.00 |
| 224 | NRMSCSTVIQDRK | 0.98 | 0.01 |
| 225 | HYTDAYK | 0.98 | 0.29 |
| 226 | MESREYK | 0.98 | 0.04 |
| 227 | RISTGCMK | 0.98 | 0.03 |
| 228 | KFGASLVCCIPECCK | 0.98 | 0.01 |
| 229 | TMTSCFKSPR | 0.98 | 0.04 |
| 230 | AVMKCENTPDGK | 0.98 | 0.02 |
| 231 | SIECAHK | 0.98 | 0.06 |

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| 232 | VPVQQMSTSSNSDWSRSR | 0.98 | 0.02 |
| 233 | PGSCQDRSR | 0.98 | 0.02 |
| 234 | LSGTPAFNDFCSALPSSHITAISFDGCQLADEDLVP | 0.98 | 0.01 |
| 235 | DFADINKYNWSLLKK | 0.98 | 0.07 |
| 236 | KKAIKYTALFTGK | 0.98 | 0.05 |
| 237 | RSNHDP SHEDYK | 0.98 | 0.02 |
| 238 | KTGAHNLCYKDPQMLK | 0.98 | 0.01 |
| 239 | MVMIWSIFICNK | 0.97 | 0.01 |
| 240 | FNLGMLFNFMK | 0.97 | 0.03 |
| 241 | NSLQPD CSDIR | 0.97 | 0.08 |
| 242 | QPDYKNFK | 0.97 | 0.02 |
| 243 | AQAERAK | 0.97 | 0.00 |
| 244 | PQARTNSRDR | 0.97 | 0.05 |
| 245 | NITKIFCNK | 0.97 | 0.01 |
| 246 | SCDNSSTGNGNR | 0.97 | 0.00 |
| 247 | NGANVNNSTATNSTPLR | 0.97 | 0.00 |
| 248 | GHCGNPGNEAADR | 0.97 | 0.08 |
| 249 | AESDYRR | 0.97 | 0.04 |
| 250 | ETDYRK KESMK | 0.97 | 0.02 |
| 251 | CRETNAEVALK | 0.97 | 0.02 |
| 252 | KNAAEGAKQTGCDRK | 0.97 | 0.00 |
| 253 | INSLVCWDWR | 0.97 | 0.07 |
| 254 | DPQARISTLCK | 0.97 | 0.05 |
| 255 | PMERCKISAQK | 0.97 | 0.02 |
| 256 | MKVILVCTSK | 0.97 | 0.07 |
| 257 | SLLTQDKC | 0.97 | 0.05 |
| 258 | MKFLPLLCVGIVFAANHHLTDQISTMIIGNMDK | 0.97 | 0.04 |
| 259 | MCTIRMSFAK | 0.97 | 0.01 |
| 260 | DSNHTTPTK | 0.97 | 0.00 |
| 261 | GGGGEGR | 0.97 | 0.34 |
| 262 | IRPLMGGSGGGMQRPGPYDR | 0.97 | 0.04 |
| 263 | NHKSATAMSICK | 0.97 | 0.02 |
| 264 | IMIDFASRDCQVEFYEQMEK | 0.97 | 0.00 |
| 265 | LSDDFYQMKADFERRK | 0.97 | 0.00 |
| 266 | KQYSMNICHDGHTXQK | 0.97 | 0.03 |
| 267 | KSPSIPDK | 0.97 | 0.02 |
| 268 | RILIKNCTQK | 0.97 | 0.01 |
| 269 | PDTTMVEK | 0.97 | 0.00 |
| 270 | YMSPDSHKIHR | 0.97 | 0.00 |
| 271 | QPDDTVLK | 0.97 | 0.00 |
| 272 | EKCPYGF SCTDTWK | 0.97 | 0.03 |
| 273 | QCVQPPLK | 0.97 | 0.00 |
| 274 | NACSF SFDTVHFICDQETPLRTGLR | 0.97 | 0.01 |
| 275 | MFCYNGTAGQNRGCR | 0.97 | 0.00 |
| 276 | MSAIMDIK | 0.97 | 0.00 |
| 277 | MPQCQEYLSK | 0.97 | 0.00 |
| 278 | SSITSCKSLDK | 0.97 | 0.03 |

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| 279 | RAAMSTACTLKGR | 0.97 | 0.00 |
| 280 | CASMIQR | 0.97 | 0.03 |
| 281 | QVSLSNGLLVFMFLNFQRR | 0.97 | 0.02 |
| 282 | LVNSQRPASLLDLVNVGLTSIR | 0.97 | 0.02 |
| 283 | TFNCHVK | 0.97 | 0.01 |
| 284 | TPACGKPCGKITK | 0.97 | 0.01 |
| 285 | TKIIWGCK | 0.97 | 0.04 |
| 286 | LFCKSQVMIK | 0.97 | 0.03 |
| 287 | GQFSNVSLGK | 0.97 | 0.02 |
| 288 | GSLHDSCLIHK | 0.97 | 0.00 |
| 289 | IFIDCKGK | 0.97 | 0.03 |
| 290 | VIHGAKLKSEDCK | 0.97 | 0.01 |
| 291 | REPYCVEKQEMIR | 0.97 | 0.03 |
| 292 | QRIVCPHQEGK | 0.97 | 0.00 |
| 293 | RITDELQQR | 0.97 | 0.00 |
| 294 | RCHRNADCQLDDNGDRK | 0.97 | 0.00 |
| 295 | QLEVLNMCMTK | 0.97 | 0.00 |
| 296 | SHTGEKPYRCMCEK | 0.97 | 0.00 |
| 297 | MAMSTRCAIARSK | 0.97 | 0.01 |
| 298 | RCSDDTGATCSNR | 0.97 | 0.00 |
| 299 | SHTGEKPYLCSVCSK | 0.97 | 0.00 |
| 300 | IGLCNGTRLTMKKMMLK | 0.97 | 0.00 |
| 301 | PTCATKSQSSVR | 0.97 | 0.01 |
| 302 | LVIMNCPHPTVLSK | 0.97 | 0.00 |
| 303 | RVHYSCIK | 0.97 | 0.00 |
| 304 | KRYLGPLEKNK | 0.97 | 0.26 |
| 305 | ADVMPGK | 0.97 | 0.19 |
| 306 | ILGPLIVDPSPDVR | 0.97 | 0.14 |
| 307 | PLGGSAG | 0.97 | 0.11 |
| 308 | LGAEIEAEKHNGERMGPLMR | 0.97 | 0.10 |
| 309 | FELSEPLGAK | 0.97 | 0.09 |
| 310 | PLGPSGGTASAIDMSR | 0.97 | 0.08 |
| 311 | VCPHPLGELVAYCGTGEVVIMSDNGDPLYSR | 0.97 | 0.07 |
| 312 | LGRALKPLGSMPVTK | 0.97 | 0.04 |
| 313 | GEGCGMVILK | 0.97 | 0.03 |
| 314 | RKVYAMADARHEAK | 0.97 | 0.03 |
| 315 | IKIYKLDITMHPLGKTSK | 0.97 | 0.02 |
| 316 | TAVMKTDSRSR | 0.97 | 0.02 |
| 317 | QMFKMCVTKDIQR | 0.97 | 0.00 |
| 318 | LCPECQMVVNKELSK | 0.97 | 0.02 |
| 319 | VTGCIPN | 0.97 | 0.05 |
| 320 | LSSAVCQATDKK | 0.97 | 0.02 |
| 321 | MKPTCEGSFDR | 0.97 | 0.01 |
| 322 | SGGSCSK | 0.97 | 0.00 |
| 323 | TYNLSGKGCPK | 0.97 | 0.00 |
| 324 | EIILDTLHFCDMR | 0.97 | 0.01 |
| 325 | ATNGDCEK | 0.97 | 0.00 |

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| 326 | TKTPEDCER | 0.97 | 0.00 |
| 327 | SNIFSSR | 0.97 | 0.36 |
| 328 | EKFEKQEYKDLTEFMADFR | 0.97 | 0.07 |
| 329 | RRHFSSR | 0.97 | 0.04 |
| 330 | YFSHEMRFK | 0.97 | 0.04 |
| 331 | MECGIESVWNNR | 0.97 | 0.04 |
| 332 | IYFSEASK | 0.97 | 0.01 |
| 333 | GKNIEHDLKNNFVR | 0.97 | 0.00 |
| 334 | AACSGEKMDR | 0.97 | 0.00 |
| 335 | PMTECIMKLILAK | 0.97 | 0.03 |
| 336 | ATCNDGLMTK | 0.97 | 0.00 |
| 337 | RIPKQLMCCELEGGR | 0.97 | 0.08 |
| 338 | IHTGEKPYVCEFCCK | 0.97 | 0.02 |
| 339 | HDLILTNTFETATYCNFCGKK | 0.97 | 0.01 |
| 340 | TINNAYTKVSIK | 0.97 | 0.00 |
| 341 | RINAAYSAAK | 0.97 | 0.00 |
| 342 | NVSIAPDDGACK | 0.97 | 0.03 |
| 343 | QKIEICSADQSCETK | 0.97 | 0.00 |
| 344 | KWNERGRMNQMCTAR | 0.97 | 0.00 |
| 345 | QCFEDNSVPDVRATWGR | 0.97 | 0.00 |
| 346 | KARFNHR | 0.97 | 0.09 |
| 347 | HLGELKAR | 0.97 | 0.03 |
| 348 | VNAICKRLIK | 0.97 | 0.02 |
| 349 | IKSASDKTRHCQSLK | 0.97 | 0.01 |
| 350 | FEALNLSFQNMCKXK | 0.97 | 0.04 |
| 351 | PATIDCYKNLRMVSLGDSNVR | 0.97 | 0.01 |
| 352 | LYTFVCCRKPDR | 0.97 | 0.00 |
| 353 | ESELKKTDAQYK | 0.97 | 0.01 |
| 354 | LIESTYK | 0.97 | 0.00 |
| 355 | VMMRYKDSDK | 0.97 | 0.00 |
| 356 | AKDSISYK | 0.97 | 0.00 |
| 357 | LPATYKSK | 0.97 | 0.00 |
| 358 | NGHDALR | 0.96 | 0.04 |
| 359 | QDADALSLSMK | 0.96 | 0.01 |
| 360 | MKSTADALK | 0.96 | 0.01 |
| 361 | SAAYIDALR | 0.96 | 0.00 |
| 362 | PGAMCLNRLHNEAYER | 0.96 | 0.01 |
| 363 | GYVCLER | 0.96 | 0.00 |
| 364 | IYVCLDLTAQSSTK | 0.96 | 0.00 |
| 365 | AEVTEAMVCLLK | 0.96 | 0.00 |
| 366 | VTPGCDSVNK | 0.96 | 0.01 |
| 367 | SPMHESRCGGAVEKK | 0.96 | 0.01 |
| 368 | AIHLCISNQTGK | 0.96 | 0.00 |
| 369 | PIQNTFPEIMAQCM | 0.96 | 0.01 |
| 370 | QSCKTTLEDNLGRQP | 0.96 | 0.01 |
| 371 | DGKSLYCMSNR | 0.96 | 0.01 |
| 372 | DLTVGRVRRVMLK | 0.96 | 0.00 |

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| 373 | NQHICAGELVDNGK | 0.96 | 0.02 |
| 374 | VGNGGCSQECVSDR | 0.96 | 0.01 |
| 375 | VVDCKCVYEK | 0.96 | 0.10 |
| 376 | DVNMCAEMLWIDTMR | 0.96 | 0.02 |
| 377 | INISTLIQLSSETQGCR | 0.96 | 0.01 |
| 378 | YLSDFLMCATK | 0.96 | 0.01 |
| 379 | YDVCGIGLIK | 0.96 | 0.01 |
| 380 | ITECDGGK | 0.96 | 0.01 |
| 381 | RNPNQMCPSMPRR | 0.96 | 0.02 |
| 382 | FHPLDACHFEVMR | 0.96 | 0.02 |
| 383 | GDTYLCVSATSDK | 0.96 | 0.00 |
| 384 | VSGTYVATTKYTKK | 0.96 | 0.13 |
| 385 | EGTKKLAQASKYK | 0.96 | 0.07 |
| 386 | EEGVILSKYKKQLK | 0.96 | 0.05 |
| 387 | MTDNKKK | 0.96 | 0.03 |
| 388 | CPMCTFVAK | 0.96 | 0.02 |
| 389 | IDXKKKDIEK | 0.96 | 0.01 |
| 390 | DSAPEMACLLGK | 0.96 | 0.01 |
| 391 | LDSPKKKMHNR | 0.96 | 0.01 |
| 392 | KKKASSIYGK | 0.96 | 0.01 |
| 393 | CRDLSSQTKKK | 0.96 | 0.00 |
| 394 | SLSMSNETKKK | 0.96 | 0.00 |
| 395 | WLPTESSEMSSTSER | 0.96 | 0.00 |
| 396 | CTPVMIAAWK | 0.96 | 0.00 |
| 397 | KELSFTDIETVSKMYGCADHCDR | 0.96 | 0.03 |
| 398 | TELTSCGQSLGTLR | 0.96 | 0.02 |
| 399 | RAECLEK | 0.96 | 0.04 |
| 400 | SCPITPRAK | 0.96 | 0.00 |
| 401 | TQDNMSRAQDK | 0.96 | 0.00 |
| 402 | MGCGASKSK | 0.96 | 0.02 |
| 403 | AGIKPYQCDFCGEK | 0.96 | 0.00 |
| 404 | PTCILLQEIK | 0.96 | 0.00 |
| 405 | TLMLDGEGYSCNR | 0.96 | 0.05 |
| 406 | QTSFNNNSCSSK | 0.96 | 0.03 |
| 407 | LVPSTFLAAMKKGMSLMGEGICSMK | 0.96 | 0.01 |
| 408 | SSIPMSCSKRR | 0.96 | 0.01 |
| 409 | DVEAETSCSPR | 0.96 | 0.01 |
| 410 | APQFLAPLMDYVYR | 0.96 | 0.00 |
| 411 | GCIKDIIHDSGR | 0.96 | 0.00 |
| 412 | GNGTCMSGR | 0.96 | 0.00 |
| 413 | YEVEQLEKKDAMSCPACSK | 0.96 | 0.01 |
| 414 | GSRSPACPR | 0.96 | 0.05 |
| 415 | MDCIQNAEGGK | 0.96 | 0.01 |
| 416 | QWMSWQPCTGR | 0.96 | 0.02 |
| 417 | NSNAMEPMGLIQCLSNMKK | 0.96 | 0.01 |
| 418 | MSHYRKMKEK | 0.96 | 0.00 |
| 419 | LCCKRASLTGMAGK | 0.96 | 0.02 |

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| 420 | PADCNSPSKK | 0.96 | 0.02 |
| 421 | ISAVLCTSGR | 0.96 | 0.01 |
| 422 | CRTSNLLIMMNET | 0.96 | 0.04 |
| 423 | DYQITMDGNTHR | 0.96 | 0.00 |
| 424 | DITDYLMK | 0.96 | 0.00 |
| 425 | LHCEINVMETVNDVK | 0.96 | 0.23 |
| 426 | IGFTECELK | 0.96 | 0.02 |
| 427 | AGQRGDQECESAMK | 0.96 | 0.02 |
| 428 | SMLSKMKNQPSLCDIPK | 0.96 | 0.01 |
| 429 | DLCDGYMGK | 0.96 | 0.00 |
| 430 | LKKGKVATCQR | 0.96 | 0.00 |
| 431 | LAPKVLDGTRCK | 0.96 | 0.01 |
| 432 | NRAFTDIEKACQR | 0.96 | 0.00 |
| 433 | RCLLNDSNKDTVRK | 0.96 | 0.01 |
| 434 | GQCEFITDLKTTSLRK | 0.96 | 0.00 |
| 435 | PDLMGFHQCPQLR | 0.96 | 0.00 |
| 436 | THDRQFKFDICK | 0.96 | 0.06 |
| 437 | NEGGEKK | 0.96 | 0.03 |
| 438 | MGGGRVGMGGMGMPMGRGGR | 0.96 | 0.02 |
| 439 | LACYTIEIYGTINK | 0.96 | 0.00 |
| 440 | MIDGKCVDFDECAMR | 0.96 | 0.02 |
| 441 | NDSPCGSTIGPIMSAK | 0.96 | 0.02 |
| 442 | SIPDIETDK | 0.96 | 0.02 |
| 443 | PDIRSTKKMK | 0.96 | 0.02 |
| 444 | IPDLDAK | 0.96 | 0.02 |
| 445 | SKKGHPD | 0.96 | 0.01 |
| 446 | NPDIMAGEK | 0.96 | 0.01 |
| 447 | KAPDGSK | 0.96 | 0.01 |
| 448 | PDRIAR | 0.96 | 0.01 |
| 449 | DIDMSPDQMK | 0.96 | 0.01 |
| 450 | GKIPDGLR | 0.96 | 0.01 |
| 451 | RVLRRMGYCTASDVIELK | 0.96 | 0.01 |
| 452 | GKGIPDLR | 0.96 | 0.00 |
| 453 | FIPDGYLGITKEEAVTFPDGSR | 0.96 | 0.00 |
| 454 | WPDESKMCLNESQKR | 0.96 | 0.00 |
| 455 | KFNSYKCNHDLSSK | 0.96 | 0.01 |
| 456 | QCQMATGQNDKK | 0.96 | 0.02 |
| 457 | RQNGGQTILCSRSPDK | 0.96 | 0.00 |
| 458 | GYCMIESGEGSSR | 0.96 | 0.02 |
| 459 | QVELCENGSGK | 0.96 | 0.00 |
| 460 | SFPCFDEPDMKAMFK | 0.96 | 0.02 |
| 461 | PRGILLVDMR | 0.96 | 0.06 |
| 462 | LAGCLSVLNPNIALLRK | 0.96 | 0.02 |
| 463 | PRSGGNKKSCR | 0.96 | 0.02 |
| 464 | LRLTCRKAAGK | 0.96 | 0.00 |
| 465 | RCRHKAVYLNEAGR | 0.96 | 0.03 |
| 466 | PAGETVMIDIC | 0.96 | 0.01 |

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| 467 | NVDSLMAFCHLHMQPR | 0.96 | 0.01 |
| 468 | FAEMCNIIER | 0.96 | 0.00 |
| 469 | KAILGCLKQAVQR | 0.96 | 0.01 |
| 470 | DICETSRMTITGDLK | 0.96 | 0.00 |
| 471 | GGRKILNSTTSMQACR | 0.96 | 0.00 |
| 472 | LKERLACLGDNIAR | 0.96 | 0.01 |
| 473 | LNCQRATNSQNIIQEAMSLR | 0.96 | 0.00 |
| 474 | ACDGHGK | 0.96 | 0.00 |
| 475 | YKVLQQMVGCR | 0.96 | 0.40 |
| 476 | LAQECKSHFEKQSNK | 0.96 | 0.08 |
| 477 | LSMCSFFK | 0.96 | 0.00 |
| 478 | KAQHFAAECR | 0.96 | 0.01 |
| 479 | KGDDTVALTDMSDQCR | 0.96 | 0.00 |
| 480 | NPPDQDPNAMTPSK | 0.95 | 0.00 |
| 481 | PNSPLGHSSIQGKR | 0.95 | 0.14 |
| 482 | TPLLGDQMERLR | 0.95 | 0.10 |
| 483 | TGKPPLGEVVIAYK | 0.95 | 0.08 |
| 484 | VKNSGFKLPLGTR | 0.95 | 0.07 |
| 485 | LLPLMLGAIDMSFPR | 0.95 | 0.07 |
| 486 | YFRGHHSPSR | 0.95 | 0.07 |
| 487 | LGGHAMPVTLPLMKK | 0.95 | 0.06 |
| 488 | ISIMSDIPTNKPLGILK | 0.95 | 0.04 |
| 489 | KVIDSNEMDKVMSILR | 0.95 | 0.00 |
| 490 | LTGNNWNLVACNK | 0.95 | 0.00 |
| 491 | SPQDLVLLMHCIER | 0.95 | 0.11 |
| 492 | NCSSELLMFRK | 0.95 | 0.10 |
| 493 | NMRYKNLAR | 0.95 | 0.10 |
| 494 | SNSELTSNVTYK | 0.95 | 0.03 |
| 495 | ILKTRYK | 0.95 | 0.02 |
| 496 | PWSHNYK | 0.95 | 0.01 |
| 497 | VYMEYKNLAEHLTDPR | 0.95 | 0.00 |
| 498 | LIIEQYK | 0.95 | 0.00 |
| 499 | LHYKTDWHR | 0.95 | 0.00 |
| 500 | KAFLHWYT | 0.95 | 0.46 |
| 501 | TGESVSEKGCMGK | 0.95 | 0.01 |
| 502 | PWGIANDMTCSIR | 0.95 | 0.01 |
| 503 | FTCSDDGTVR | 0.95 | 0.00 |
| 504 | LGGADNYKLCR | 0.95 | 0.00 |
| 505 | NMDEMAFCSKK | 0.95 | 0.03 |
| 506 | ALLKAACERHAK | 0.95 | 0.00 |
| 507 | CVLLDNK | 0.95 | 0.12 |
| 508 | ALEDAQKNYTRTAKELNR | 0.95 | 0.08 |
| 509 | SANAFSFFVFSRK | 0.95 | 0.06 |
| 510 | PGNRVILK | 0.95 | 0.00 |
| 511 | SPGASALKICR | 0.95 | 0.00 |
| 512 | WASTFCQQTSYVIR | 0.95 | 0.01 |
| 513 | FCQSQUERYLNMKMSK | 0.95 | 0.01 |

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| 514 | VPLIMGILSCTK | 0.95 | 0.01 |
| 515 | FVISTCTQMK | 0.95 | 0.03 |
| 516 | LKYDPGLEGIDEDKK | 0.95 | 0.07 |
| 517 | VKTAKYTVLKK | 0.95 | 0.05 |
| 518 | SSEVAEDTSTSSR | 0.95 | 0.02 |
| 519 | KTLEGMKKK | 0.95 | 0.01 |
| 520 | FLRIDSPATKKK | 0.95 | 0.00 |
| 521 | IGCTGMHPVK | 0.95 | 0.01 |
| 522 | SMLLASSVIAHGNNRMMGSRNCR | 0.95 | 0.03 |
| 523 | RIQLCELVDPERK | 0.95 | 0.00 |
| 524 | RVCDDAEAILNHR | 0.95 | 0.00 |
| 525 | SRLAGMDEDVHFTENCR | 0.95 | 0.00 |
| 526 | LKESCDSPIQCSETTANSTCNETGVCQCIEDSISK | 0.95 | 0.02 |
| 527 | MSGNRCSPTEMRLGK | 0.95 | 0.00 |
| 528 | PSIKTVNCNGFK | 0.95 | 0.00 |
| 529 | VNNLLDEPGMDCRSS | 0.95 | 0.00 |
| 530 | LLKKSNYLMCPK | 0.95 | 0.00 |
| 531 | LASIKAR | 0.95 | 0.03 |
| 532 | FRCYSASLQGSELPNPK | 0.95 | 0.02 |
| 533 | NPTSDTNFSNSEAGK | 0.95 | 0.00 |
| 534 | SNSPAAETNR | 0.95 | 0.00 |
| 535 | AQIDVCSFYDR | 0.95 | 0.01 |
| 536 | DALQETNESDLLMNK | 0.95 | 0.01 |
| 537 | ALDYIASK | 0.95 | 0.00 |
| 538 | LSMSSDSYSEK | 0.95 | 0.00 |
| 539 | DYEKIGR | 0.95 | 0.00 |
| 540 | HTLSDDYEK | 0.95 | 0.00 |
| 541 | PSVITCAPMATER | 0.95 | 0.01 |
| 542 | AEIKQWYKGFMR | 0.95 | 0.25 |
| 543 | DPTGLTSAASRESR | 0.95 | 0.00 |
| 544 | CLMEQNVEER | 0.95 | 0.00 |
| 545 | CLAASEGAK | 0.95 | 0.00 |
| 546 | PTSASGHAALIYGCPFCGVR | 0.95 | 0.01 |
| 547 | TGCIQAGLRGK | 0.95 | 0.01 |
| 548 | RASDGGANIHCQR | 0.95 | 0.08 |
| 549 | CCSLEHLRTDCKTSLKCSECNSTSHMTAMHMSK | 0.95 | 0.00 |
| 550 | GGEESGGDGRLSRGNCR | 0.95 | 0.02 |
| 551 | NLTKPDFLR | 0.95 | 0.01 |
| 552 | LTFSPDVTSIK | 0.95 | 0.00 |
| 553 | WEMLKRAETACFR | 0.94 | 0.04 |
| 554 | LIPLCGNGIVER | 0.94 | 0.02 |
| 555 | SAREILCAMGR | 0.94 | 0.01 |
| 556 | PKVGDLCAAK | 0.94 | 0.01 |
| 557 | MSATGEGMKLAGFSALTFVAADDGTDSS | 0.94 | 0.01 |
| 558 | DARCVVESNGK | 0.94 | 0.01 |
| 559 | IRTRRCQMAGK | 0.94 | 0.00 |
| 560 | QFEMIDGHLCEK | 0.94 | 0.00 |

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| 561 | VTWTKTLSFLLYK | 0.94 | 0.03 |
| 562 | CGNNPLIGR | 0.94 | 0.01 |
| 563 | LLVEPSMTHLAHIPDRSDRVTGNSLSLLER | 0.94 | 0.01 |
| 564 | ENTMNYKTIVTPKK | 0.94 | 0.02 |
| 565 | LYKTFKDRK | 0.94 | 0.00 |
| 566 | LSEKELIGTYK | 0.94 | 0.00 |
| 567 | NPGGTVLSYK | 0.94 | 0.00 |
| 568 | DPGAINITHMSSYK | 0.94 | 0.00 |
| 569 | SANSIMRIDKSYK | 0.94 | 0.00 |
| 570 | PEDATTASQVAEMYK | 0.94 | 0.00 |
| 571 | GGDIGAVYK | 0.94 | 0.00 |
| 572 | EICDLADKHK | 0.94 | 0.02 |
| 573 | KCVMGGEFEAALLK | 0.94 | 0.01 |
| 574 | MYIKHVQDMCIHWGR | 0.94 | 0.00 |
| 575 | PIFDTVCMLGVHR | 0.94 | 0.01 |
| 576 | CMESGGLSMMIR | 0.94 | 0.00 |
| 577 | TGSIHSGKDSR | 0.94 | 0.00 |
| 578 | VAMRTDANELTNPHSKSR | 0.94 | 0.00 |
| 579 | SLSPVMCSIVR | 0.94 | 0.00 |
| 580 | YENKDKMKSNTIIVPCK | 0.94 | 0.03 |
| 581 | DTEILCKTGLYR | 0.94 | 0.02 |
| 582 | CSIEIGMK | 0.94 | 0.00 |
| 583 | MGANGLLCHVIK | 0.94 | 0.00 |
| 584 | LCHEVTLVAIKDGQER | 0.94 | 0.00 |
| 585 | GIVPITCGELFK | 0.94 | 0.01 |
| 586 | HVLTASHCFAEGTHAIR | 0.94 | 0.13 |
| 587 | PLEIPTAEESISTMLGK | 0.94 | 0.07 |
| 588 | APLATSTGSIDSLGNHLTFK | 0.94 | 0.05 |
| 589 | LPMLNPDLGASPLK | 0.94 | 0.05 |
| 590 | LGLLEPLSKEHK | 0.94 | 0.04 |
| 591 | KTSITPLQPMSSARCALGAVELDGK | 0.94 | 0.02 |
| 592 | ASEPLIKLNCMDK | 0.94 | 0.00 |
| 593 | EKLIFQIGTCDAK | 0.94 | 0.00 |
| 594 | MCQGFTTANNK | 0.94 | 0.00 |
| 595 | NSVASHEAGVSSATKKK | 0.94 | 0.00 |
| 596 | AGATKKPKK | 0.94 | 0.00 |
| 597 | GMSSTQKKNPLAMLKK | 0.94 | 0.00 |
| 598 | ISHDKYTMNWHYHR | 0.94 | 0.44 |
| 599 | GSNGIIR | 0.94 | 0.07 |
| 600 | FNYEYDNL | 0.94 | 0.02 |
| 601 | STVQESTGCSPNRIMLGR | 0.94 | 0.00 |
| 602 | DNYGGDLDALMKNK | 0.94 | 0.03 |
| 603 | LESTRHSKNFMSDKNESK | 0.94 | 0.01 |
| 604 | FSRAGGK | 0.94 | 0.00 |
| 605 | TEDCSDGLDEK | 0.94 | 0.00 |
| 606 | ANDAINMYTMCLEHIK | 0.94 | 0.00 |
| 607 | MDPSADITC | 0.94 | 0.01 |

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| 608 | KIDPGYCDIFSPELAMPTR | 0.94 | 0.01 |
| 609 | EVKDTYMLQVIAKDGGSPMK | 0.94 | 0.00 |
| 610 | LVGLLDLKAGKDYVR | 0.94 | 0.00 |
| 611 | TGEMRVIK | 0.94 | 0.00 |
| 612 | GLCSPGMAFD TAR | 0.94 | 0.00 |
| 613 | NGSDVTYARAASNCR | 0.94 | 0.00 |
| 614 | NIQMFLTNSR | 0.94 | 0.09 |
| 615 | SNSGTNKTDGKAK | 0.94 | 0.00 |
| 616 | YLVSIISHK | 0.94 | 0.00 |
| 617 | VAVSHLQK | 0.94 | 0.00 |
| 618 | CRNMPQGSELRVPGK | 0.94 | 0.00 |
| 619 | DILSCLEADPTKR | 0.94 | 0.00 |
| 620 | ATFAEKSAVCGR | 0.94 | 0.01 |
| 621 | CVVNGHTYCKMGLTGR | 0.94 | 0.02 |
| 622 | TKNQIDYIMINK | 0.94 | 0.01 |
| 623 | CHGGNVELK | 0.94 | 0.01 |
| 624 | LNDYEERKR | 0.94 | 0.00 |
| 625 | DDYEAIK | 0.94 | 0.00 |
| 626 | DYVAYIK | 0.94 | 0.00 |
| 627 | GQMSTADAEDYIK | 0.94 | 0.00 |
| 628 | CHDPASYMKIGK | 0.94 | 0.00 |
| 629 | GDYISKLK | 0.94 | 0.00 |
| 630 | HCDFSANTLGYMK | 0.94 | 0.11 |
| 631 | KMFDAKISEMEEICK | 0.94 | 0.00 |
| 632 | CLPVNHSGHVTGR | 0.94 | 0.00 |
| 633 | VLSVRHVTMCDIMKR | 0.93 | 0.00 |
| 634 | LPASITAMEAIDYKPK | 0.93 | 0.00 |
| 635 | VKECLEK | 0.93 | 0.05 |
| 636 | SASDTCGMFGLSK | 0.93 | 0.01 |
| 637 | GGEHQGRGGREWDDRGR | 0.93 | 0.07 |
| 638 | KATLETVHAR | 0.93 | 0.06 |
| 639 | KAARHGK | 0.93 | 0.01 |
| 640 | SAALIQQCTAVKNK | 0.93 | 0.00 |
| 641 | LVDVGCIQHFTR | 0.93 | 0.04 |
| 642 | MPAYKLMNFDTKGR | 0.93 | 0.01 |
| 643 | SALIKAISSNYK | 0.93 | 0.01 |
| 644 | NGGISYK | 0.93 | 0.00 |
| 645 | FEEAYKALVSDTK | 0.93 | 0.00 |
| 646 | EQMGGIMYKLSNMK | 0.93 | 0.00 |
| 647 | NTLVATYKGTK | 0.93 | 0.00 |
| 648 | IEAYKDSVEGK | 0.93 | 0.00 |
| 649 | AVDGSYVYK | 0.93 | 0.00 |
| 650 | EVTDEDVYK | 0.93 | 0.00 |
| 651 | NGDRVHVQWSDGAMYK | 0.93 | 0.00 |
| 652 | SMTGETNIPDEDK | 0.93 | 0.01 |
| 653 | SHGPDGK | 0.93 | 0.00 |
| 654 | SXELPDGQVITIGNER | 0.93 | 0.00 |

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| 655 | SFSHSPDLTAHK | 0.93 | 0.00 |
| 656 | KPDESTLEAK | 0.93 | 0.00 |
| 657 | RSSPPDSNRYDHRR | 0.93 | 0.00 |
| 658 | VEITDALK | 0.93 | 0.01 |
| 659 | ANCNSGFENVPGNPSR | 0.93 | 0.00 |
| 660 | SAIADIMKEER | 0.93 | 0.00 |
| 661 | IPGVSVEECARR | 0.93 | 0.01 |
| 662 | DGNLVDCDPANK | 0.93 | 0.00 |
| 663 | LIVMGDGASGKTSLCMR | 0.93 | 0.00 |
| 664 | LGVASRPSQQR | 0.93 | 0.02 |
| 665 | TANCQPVGK | 0.93 | 0.00 |
| 666 | LAIEGKVIQRAECRPVANDTYMK | 0.93 | 0.01 |
| 667 | RHAIDWIPEKNILLIVK | 0.93 | 0.02 |
| 668 | CAKSAFAMTK | 0.93 | 0.02 |
| 669 | DIIDCFVR | 0.93 | 0.08 |
| 670 | LASQNGCVTVPK | 0.93 | 0.03 |
| 671 | HYGQFTCEXCKSFFK | 0.93 | 0.03 |
| 672 | ENEVREILSPSECSSR | 0.93 | 0.01 |
| 673 | CIMRGANLPSEIDDK | 0.93 | 0.01 |
| 674 | LGGQECTGESVK | 0.93 | 0.01 |
| 675 | CIAGKHNGHK | 0.93 | 0.00 |
| 676 | LNAQLCVVDSGK | 0.93 | 0.00 |
| 677 | TVFCDGCALGVR | 0.93 | 0.04 |
| 678 | CMSTQKWQR | 0.93 | 0.00 |
| 679 | ELTIMTRCQERGTPLFK | 0.93 | 0.00 |
| 680 | TKPQVQINCWVTSNGKGR | 0.93 | 0.00 |
| 681 | CSLSGIK | 0.93 | 0.00 |
| 682 | CSFTIQMWNYHLR | 0.93 | 0.00 |
| 683 | AQTTRAADAVR | 0.93 | 0.00 |
| 684 | LEVKTGMDLGPLIYK | 0.93 | 0.18 |
| 685 | GSSNPLGLNSNLDK | 0.93 | 0.13 |
| 686 | XWLVLMLGAPDMAFPR | 0.93 | 0.12 |
| 687 | TKFMNYSSTVVCTLGTSHPLEIETRDMFGNLTPYK | 0.93 | 0.07 |
| 688 | GMATALSMPLLGK | 0.93 | 0.02 |
| 689 | VYECMFKVLKDVELLDDR | 0.93 | 0.02 |
| 690 | LTLLSAQSHGCAGIEK | 0.93 | 0.02 |
| 691 | YNLPINTMWIQRDSCEDNKRFK | 0.93 | 0.02 |
| 692 | KEDATCPVSEPGSTLGKIK | 0.93 | 0.00 |
| 693 | SFVSFLGK | 0.93 | 0.01 |
| 694 | ILTANEMACALFGYNR | 0.93 | 0.04 |
| 695 | NITLSGPTTFCPIIEK | 0.93 | 0.00 |
| 696 | KDYNLPKPKMTNSDLSR | 0.93 | 0.00 |
| 697 | YMSVCLLYRGDVISK | 0.93 | 0.00 |
| 698 | RFFSGCTIPR | 0.93 | 0.18 |
| 699 | MSTNSSDLYVR | 0.93 | 0.01 |
| 700 | EESSPAKISFLDAQR | 0.93 | 0.01 |
| 701 | IVSIATNSNNRQVERIMK | 0.93 | 0.00 |

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| 702 | KGIAMTVSHQQSMPK | 0.93 | 0.00 |
| 703 | ICYVGIKTVK | 0.92 | 0.00 |
| 704 | SFSRRGALAIHK | 0.92 | 0.01 |
| 705 | QSNAENKNTKNSNTEGK | 0.92 | 0.00 |
| 706 | ALKLYVYNTDSDSCR | 0.92 | 0.00 |
| 707 | DYTEDIQIDASSRYR | 0.92 | 0.02 |
| 708 | PKFIDKFLLGASSLSRK | 0.92 | 0.00 |
| 709 | KRGKESDYMIGR | 0.92 | 0.00 |
| 710 | SGDYEEDMER | 0.92 | 0.00 |
| 711 | FTSCQAPLVTADDR | 0.92 | 0.00 |
| 712 | LTAISLGQGGPRAEAMMR | 0.92 | 0.02 |
| 713 | FFYIPFGQGPRICLGMRLLALLELK | 0.92 | 0.01 |
| 714 | TGKMHRFAFCVK | 0.92 | 0.00 |
| 715 | ICETSREVVAI GK | 0.92 | 0.01 |
| 716 | RCFYRPLTPR | 0.92 | 0.00 |
| 717 | AVRGCQGVDLNR | 0.92 | 0.05 |
| 718 | LCSVANKIQACYGFFSWKK | 0.92 | 0.01 |
| 719 | FHFDDKLSYK | 0.92 | 0.02 |
| 720 | DRDEEREYKSSR | 0.92 | 0.01 |
| 721 | GIQHKGYK | 0.92 | 0.00 |
| 722 | ASLRGDVDAYKMEK | 0.92 | 0.00 |
| 723 | YKDIGKASMKNLPISSSK | 0.92 | 0.00 |
| 724 | GPQLICSGSDDGTIK | 0.92 | 0.00 |
| 725 | CSCFDTIFKGTYENG GIVR | 0.92 | 0.01 |
| 726 | IKAGRELGLTFVPFPEG GGR | 0.92 | 0.02 |
| 727 | YGPVCFVDMKSR | 0.92 | 0.01 |
| 728 | LPDVRASSTRK | 0.92 | 0.03 |
| 729 | PRSPDPVEGR | 0.92 | 0.02 |
| 730 | LTYPDELGR | 0.92 | 0.01 |
| 731 | TAYEMAQSM D KRVSYICLINS | 0.92 | 0.01 |
| 732 | VIEFPNPDK | 0.92 | 0.01 |
| 733 | GFHGDGYNSCTK | 0.92 | 0.00 |
| 734 | MMYLSVPDMMGK | 0.92 | 0.00 |
| 735 | EDPPDTSGIKMDR | 0.92 | 0.00 |
| 736 | LAGPDLK | 0.92 | 0.00 |
| 737 | HLANGLPDFLMK | 0.92 | 0.00 |
| 738 | TSPSSFGDDICQK | 0.92 | 0.01 |
| 739 | DGLDIMLNSLC EMAGK | 0.92 | 0.00 |
| 740 | LAILIRSR | 0.92 | 0.35 |
| 741 | ERSHSFSSPSLQK | 0.92 | 0.02 |
| 742 | EMKMKKK | 0.92 | 0.10 |
| 743 | DALGAPK | 0.92 | 0.01 |
| 744 | DEDALRGLDPR | 0.92 | 0.01 |
| 745 | CPSGSQSSKSHMAR | 0.92 | 0.01 |
| 746 | TLFPLYTDAQCDGLINDYESAVNKKGK | 0.92 | 0.00 |
| 747 | KENSGVEGCLLGK | 0.92 | 0.01 |
| 748 | LMLKYCDIFGILDK | 0.92 | 0.01 |

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| 749 | VLVNRGGKSIQDECEQYITK | 0.92 | 0.00 |
| 750 | QVTSKLEQALQHYDDA | 0.92 | 0.00 |
| 751 | LNKGGMFGSYTPDRYK | 0.92 | 0.00 |
| 752 | LVGMSTGNVSLKEHVHPDLACADK | 0.92 | 0.02 |
| 753 | MSCNFPHGAMDTHTFANMR | 0.91 | 0.00 |
| 754 | AADDVGSCGMDRAK | 0.91 | 0.01 |
| 755 | VKNQRMCFRTNGTK | 0.91 | 0.04 |
| 756 | GGVPSMLRLASCPEKSR | 0.91 | 0.00 |
| 757 | SLIRNSKTNK | 0.91 | 0.02 |
| 758 | SSHVLLVMKG | 0.91 | 0.01 |
| 759 | ILSLQAAHIVSHMIK | 0.91 | 0.00 |
| 760 | PLGKKNEGFCSGK | 0.91 | 0.07 |
| 761 | NPLGLVPVLEKD GK | 0.91 | 0.05 |
| 762 | VQELGKNLGMEINR | 0.91 | 0.01 |
| 763 | SPHATIDYLNK | 0.91 | 0.00 |
| 764 | CRIGGASSFR | 0.91 | 0.00 |
| 765 | ARGESSDYAWK | 0.91 | 0.00 |
| 766 | TTDTIEVSKLNGDYRK | 0.91 | 0.00 |
| 767 | PVDYPAGR | 0.91 | 0.00 |
| 768 | IVSTYKSRNDEFK | 0.91 | 0.08 |
| 769 | IDSPLILYK | 0.91 | 0.01 |
| 770 | VVLRSYK | 0.91 | 0.01 |
| 771 | VERAHRQISGAYK | 0.91 | 0.00 |
| 772 | EPAQAYFKDQIYK | 0.91 | 0.00 |
| 773 | VSGCEGARWR | 0.91 | 0.02 |
| 774 | CLEMEKSIKASSDNEVTLR | 0.91 | 0.00 |
| 775 | FKFSLSTSSR | 0.91 | 0.00 |
| 776 | QLFPPTFSSLSR | 0.91 | 0.00 |
| 777 | GDSVWKC VGLVK | 0.91 | 0.03 |
| 778 | GWQPVNICITSAGDLLVTMR | 0.91 | 0.01 |
| 779 | FHTCVSLLEG MVNPER | 0.91 | 0.02 |
| 780 | NEGLKMMMSLIK | 0.91 | 0.00 |
| 781 | GIPDPYLRER | 0.91 | 0.01 |
| 782 | SIEQNMSMIGKMVIDMKDPDR | 0.91 | 0.00 |
| 783 | TLISAPDDRPTSK | 0.91 | 0.00 |
| 784 | PDLESGEASLNTTPR | 0.91 | 0.00 |
| 785 | SADSKEPDSKTTK | 0.91 | 0.00 |
| 786 | GKRPSCATLFAANK | 0.91 | 0.00 |
| 787 | FAHCGVVAMR | 0.91 | 0.14 |
| 788 | ALERAINKPSYTCTR | 0.91 | 0.01 |
| 789 | SAIALEK | 0.91 | 0.02 |
| 790 | NMVDVSAIASIMPR | 0.91 | 0.00 |
| 791 | LADITEPNAIGK | 0.91 | 0.00 |
| 792 | YVLRNGGIRR | 0.91 | 0.07 |
| 793 | ANMLGCISLSAR | 0.91 | 0.02 |
| 794 | KSCSMKLVVK | 0.91 | 0.02 |
| 795 | GGISLPVFRCAR | 0.91 | 0.03 |

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| 796 | CGQKVAQATLLK | 0.91 | 0.01 |
| 797 | RCMGNAHQTLKVLSDLLGHDNTEIR | 0.91 | 0.00 |
| 798 | LGCHSGFQTWVK | 0.90 | 0.03 |
| 799 | ERGKDKDSSSK | 0.90 | 0.00 |
| 800 | LLDDSTNENGSLKAR | 0.90 | 0.03 |
| 801 | LSPKAARKDR | 0.90 | 0.01 |
| 802 | CEAEMAGVDIK | 0.90 | 0.00 |
| 803 | IAYVLTWANSCQNSTVCSYYTPYKGHPGEKDFLK | 0.90 | 0.01 |
| 804 | MGTKQSHIHKLDTVSKR | 0.90 | 0.00 |
| 805 | SLAALDATNR | 0.90 | 0.01 |
| 806 | NDSKMAVDAALR | 0.90 | 0.00 |
| 807 | EVVDMVCLNADK | 0.90 | 0.01 |
| 808 | SKIDYHKVNMEPLDK | 0.90 | 0.00 |
| 809 | PKEWTDHDYALQNSNESSK | 0.90 | 0.00 |
| 810 | KIDWIKGIDYRR | 0.90 | 0.00 |
| 811 | KFLEYKFGQGVVENPR | 0.90 | 0.00 |
| 812 | QYVEGLMSDYQK | 0.90 | 0.00 |
| 813 | HSMGHRNMTDYSHKSSK | 0.90 | 0.00 |
| 814 | NMDEPQRGDYVHAKIK | 0.90 | 0.00 |
| 815 | GDDYILNGQK | 0.90 | 0.00 |
| 816 | GRPIGSSFR | 0.90 | 0.03 |
| 817 | VLHHQSVACQRKPMSPLELATMAR | 0.90 | 0.01 |
| 818 | SPLGSPR | 0.90 | 0.32 |
| 819 | RHNRVGMPLGSMPIPK | 0.90 | 0.12 |
| 820 | FFLGGPLTLRGFNIK | 0.90 | 0.05 |
| 821 | VLYTYKASEDMAATESMPLLGYEVRTLSTWFEGCK | 0.90 | 0.02 |
| 822 | MTTVGVNASQPDRVDALR | 0.90 | 0.01 |
| 823 | GTPTLTQFFNKKDCK | 0.90 | 0.02 |
| 824 | MKSDNKGVGCSK | 0.90 | 0.01 |
| 825 | LSAASLLDCPNARKMSSVSLMESPYRR | 0.90 | 0.01 |
| 826 | EISILEGEMYQLSHMLSDQKILMSSMMAMSLVSDK | 0.90 | 0.00 |
| 827 | KMAGFSR | 0.90 | 0.02 |
| 828 | MLYETGIFSR | 0.90 | 0.00 |
| 829 | FQHRCVSVFMDKK | 0.90 | 0.02 |
| 830 | SPDGLITMNNFR | 0.90 | 0.11 |
| 831 | LGFEPPDRK | 0.90 | 0.05 |
| 832 | TLGAEKRSRPDDTESTIVMR | 0.90 | 0.01 |
| 833 | KLVARVSEQMANPDMGR | 0.90 | 0.00 |
| 834 | NAMPDVLDPVK | 0.90 | 0.00 |
| 835 | TKASKVTSFPDAGK | 0.90 | 0.00 |
| 836 | VNGALPDTTSNVTDSENK | 0.90 | 0.00 |
| 837 | ISEGNLMSGTVPDIR | 0.90 | 0.00 |
| 838 | APHATSNRYVVCLEK | 0.90 | 0.00 |
| 839 | IRKLFNLXKEDDVR | 0.90 | 0.03 |
| 840 | MFNLLEIDSTK | 0.90 | 0.01 |
| 841 | NSAIMSDVK | 0.89 | 0.00 |
| 842 | IEMAAIKSAELSSIMSKK | 0.89 | 0.00 |

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| 843 | QNCIVFLSNK | 0.89 | 0.01 |
| 844 | ICGQSFFQSRSLFTSHK | 0.89 | 0.05 |
| 845 | YKVDGISRDFR | 0.89 | 0.21 |
| 846 | NYKFKIRFR | 0.89 | 0.08 |
| 847 | VLGRKSGYKLR | 0.89 | 0.00 |
| 848 | EAlFYYSYK | 0.89 | 0.00 |
| 849 | CISEGAPSQSKENFLK | 0.89 | 0.00 |
| 850 | TNSWTQVANMSGR | 0.89 | 0.00 |
| 851 | ASVGHSR | 0.89 | 0.07 |
| 852 | YTLSQETVDYVK | 0.89 | 0.00 |
| 853 | ELNINDRACVKLSYLPK | 0.89 | 0.01 |
| 854 | LANLLGDTIFFPKPIDLKVPLFK | 0.89 | 0.03 |
| 855 | KQAASRFYTLLVLK | 0.89 | 0.01 |
| 856 | RYWPVIDDALRR | 0.89 | 0.01 |
| 857 | LYTVQFQDALR | 0.89 | 0.01 |
| 858 | MRFVIDKMSDVSESESCSIHK | 0.89 | 0.00 |
| 859 | IRVSSLLMFMAAR | 0.89 | 0.03 |
| 860 | MEPDGIMNIFRRSEK | 0.88 | 0.07 |
| 861 | VVNLPDAWTK | 0.88 | 0.02 |
| 862 | ISLQLPDIKMNNLLTDK | 0.88 | 0.01 |
| 863 | DITAQIKRLNIPDK | 0.88 | 0.00 |
| 864 | KFAWPK | 0.88 | 0.00 |
| 865 | EPDVILTQTIKGK | 0.88 | 0.00 |
| 866 | QQSFIMAVSSKPKIK | 0.88 | 0.00 |
| 867 | MLGKLYFSK | 0.88 | 0.00 |
| 868 | LGAARSKTQMFSR | 0.88 | 0.00 |
| 869 | VVNMYKSVR | 0.88 | 0.03 |
| 870 | EAYKRADEVLQSHK | 0.88 | 0.01 |
| 871 | VKTAEVATYRYK | 0.88 | 0.00 |
| 872 | GVDQIMAEIYK | 0.88 | 0.00 |
| 873 | MEGKSYKGVKK | 0.88 | 0.00 |
| 874 | MSKEEEKDGMADGNGK | 0.88 | 0.00 |
| 875 | TCKSLWLVIDNK | 0.88 | 0.02 |
| 876 | CASTMATTYSSGSIDDK | 0.88 | 0.01 |
| 877 | CGSATPGASSQNGK | 0.88 | 0.01 |
| 878 | KEAKAQAATNSGEDAFEMGIK | 0.88 | 0.00 |
| 879 | CIVKILSDKANLMK | 0.88 | 0.00 |
| 880 | LPIYMMLVDYQKIVR | 0.88 | 0.02 |
| 881 | DGDYFADMEGR | 0.88 | 0.01 |
| 882 | AISGGEITDYDVMESEK | 0.88 | 0.00 |
| 883 | KFSISSQDKFVTVMK | 0.88 | 0.00 |
| 884 | APLVMTCVFEGSK | 0.88 | 0.03 |
| 885 | YMSCIMLYRGDVVVK | 0.88 | 0.00 |
| 886 | NLKLGSSELGK | 0.88 | 0.00 |
| 887 | VSLLYDVPGYK | 0.87 | 0.02 |
| 888 | MSALQLKDGfYK | 0.87 | 0.00 |
| 889 | GLVTETSVLDPDEGIR | 0.87 | 0.01 |

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| 890 | PDPSELNTQSKKQKGENNSDSGSDK | 0.87 | 0.00 |
| 891 | AGSTPDLQEKDQR | 0.87 | 0.00 |
| 892 | VQIAPDSGGMPER | 0.87 | 0.00 |
| 893 | GYTGDPPDKRR | 0.87 | 0.00 |
| 894 | LKFSISRSHLEQMSFIGK | 0.87 | 0.00 |
| 895 | SFEGAHSIKYFSDR | 0.87 | 0.00 |
| 896 | DDMGLCELFSPSKVFD | 0.87 | 0.03 |
| 897 | SVSFVDESHK | 0.87 | 0.00 |
| 898 | ARMQEAADNLGSTSSDYSFTISK | 0.87 | 0.03 |
| 899 | VKIPVGNSMMVDYR | 0.87 | 0.00 |
| 900 | VFTQDYDNNSDR | 0.87 | 0.00 |
| 901 | VDYKAHMTSQFGTVLK | 0.87 | 0.00 |
| 902 | IDYNFGDLER | 0.87 | 0.00 |
| 903 | CITEHFRNVYSSSK | 0.87 | 0.04 |
| 904 | FMTLDQIVVDEKFSECRR | 0.86 | 0.02 |
| 905 | IPPKPFPLGYAKEK | 0.86 | 0.09 |
| 906 | LFRSLAMTTTPDR | 0.86 | 0.02 |
| 907 | SYEXPDGQVITIGNER | 0.86 | 0.00 |
| 908 | IEPDVGMSQLDANR | 0.86 | 0.00 |
| 909 | KYELPDGQVITIGNER | 0.86 | 0.00 |
| 910 | RHAARPDLMVK | 0.86 | 0.00 |
| 911 | MAEKSHNYPDIIEAGQK | 0.86 | 0.00 |
| 912 | MLFTGSFCLTQKEMTDLVVK | 0.86 | 0.01 |
| 913 | PGVLAIIANNAAGIVTSLFLR | 0.86 | 0.00 |
| 914 | NTSPSALDATGSSTKNPK | 0.86 | 0.00 |
| 915 | LFSVLLSRTK | 0.86 | 0.00 |
| 916 | MGINQTAHFSMETPVAISR | 0.86 | 0.00 |
| 917 | FYKQHASHGFLTCLR | 0.86 | 0.01 |
| 918 | EVSVMAKAHSDVDISR | 0.86 | 0.00 |
| 919 | TVLFVPEPHVCERLIR | 0.86 | 0.00 |
| 920 | VNAQQGSPENNAAFR | 0.85 | 0.04 |
| 921 | IDVKLNPR | 0.85 | 0.00 |
| 922 | AIRLDPDSKLMQQEMQNLTR | 0.85 | 0.00 |
| 923 | TNSYPNIVFDHYR | 0.85 | 0.00 |
| 924 | TATTADYNLGAIEGR | 0.85 | 0.00 |
| 925 | WGVMSGDITPQDYNRR | 0.85 | 0.00 |
| 926 | KALGKKTMSSEGLAR | 0.85 | 0.01 |
| 927 | ILQVLENDGTFGRYK | 0.85 | 0.02 |
| 928 | VLHPVRSMGVGSTYK | 0.85 | 0.00 |
| 929 | QGSPVGNKMPTAKPNYK | 0.85 | 0.00 |
| 930 | FRFNLFMYSALYRK | 0.85 | 0.15 |
| 931 | CIYNLVDKPLPGEK | 0.85 | 0.01 |
| 932 | MYTQMTDESQDALLPR | 0.85 | 0.00 |
| 933 | VVPDILIEQGK | 0.84 | 0.01 |
| 934 | PANIMFADNNCPVMDLGSSVMARTEIK | 0.84 | 0.00 |
| 935 | CHTFIGGMPVVEDK | 0.84 | 0.00 |
| 936 | LNLAGRDLTDYLMK | 0.84 | 0.00 |

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| 937 | QLLMAMVVNKTTIADNYK | 0.84 | 0.00 |
| 938 | LDNSNSIMSEIR | 0.83 | 0.01 |
| 939 | LQWDPDHSPAGGKLVR | 0.83 | 0.01 |
| 940 | YYGFMFDTPDRAHR | 0.83 | 0.00 |
| 941 | IKGTDTLILLDYLK | 0.83 | 0.00 |
| 942 | MMDKHGEDYVAMARDPMNIFQHTPK | 0.83 | 0.00 |
| 943 | RAQRFVVK | 0.83 | 0.00 |
| 944 | DQNHTHQMVQLQKAFVEKGQR | 0.83 | 0.00 |
| 945 | FPDDVVMIEKVR | 0.82 | 0.01 |
| 946 | IEKYVPDQEVQSQK | 0.82 | 0.00 |
| 947 | YGCKWSTIEGFQFVIKEQVK | 0.82 | 0.01 |
| 948 | LYVVQVENALLNR | 0.81 | 0.21 |
| 949 | PDGVFISR | 0.81 | 0.00 |
| 950 | HMPDVAEGVGK | 0.81 | 0.00 |
| 951 | PDGVFIINLR | 0.81 | 0.00 |
| 952 | RLCGVFFPSLMETGR | 0.81 | 0.01 |
| 953 | FFSTLYASMSR | 0.80 | 0.00 |
| 954 | RLRVFSRMESEQAEK | 0.80 | 0.00 |
| 955 | PDTVTENTFLDWPVVMNGK | 0.80 | 0.00 |
| 956 | PDTRIVNNSFFINERAR | 0.80 | 0.00 |
| 957 | GFAFVTFEDYDSVDK | 0.80 | 0.00 |
| 958 | SLLVGQYEANPLIHDEMOK | 0.80 | 0.03 |
| 959 | CAPEFTVFMASER | 0.80 | 0.02 |
| 960 | IKAYFGKEGSSR | 0.79 | 0.00 |
| 961 | TLFFSRDRMVEREWR | 0.79 | 0.00 |
| 962 | TFLLVFGKK | 0.79 | 0.03 |
| 963 | LXSLPVLAGAITMLLTDR | 0.79 | 0.01 |
| 964 | DARTEDKDIFGDTALLAATR | 0.79 | 0.00 |
| 965 | SIEVGDDYNIPHWMNHSFYMSK | 0.78 | 0.01 |
| 966 | LFVTQVEDALVGR | 0.77 | 0.01 |
| 967 | GYDVFKAYARSK | 0.77 | 0.04 |
| 968 | MTSVFGGSKPDSQLLTK | 0.77 | 0.00 |
| 969 | IDIGVGDAITSGGA | 0.76 | 0.00 |
| 970 | XSRVAELANAVVSNADQK | 0.75 | 0.01 |
| 971 | IMVFAVQHKGK | 0.74 | 0.00 |
| 972 | VVFINKTNILLEQQYKR | 0.73 | 0.01 |
| 973 | CATSVQRRWRGFLGR | 0.72 | 0.00 |
| 974 | AYVNFSK | 0.68 | 0.02 |
| 975 | FTVALSK | 0.67 | 0.01 |
| 976 | AMSKDVNR | 0.67 | 0.00 |
| 977 | PKIPSKK | 0.61 | 0.01 |
| 978 | QEEIMSAKNR | 0.59 | 0.01 |
| 979 | ENVNVVHEAFR | 0.00 | 0.29 |
| 980 | SRMDSRK | 0.00 | 0.18 |
| 981 | GGGGGRPR | 0.00 | 0.17 |
| 982 | MSCMSSSPR | 0.00 | 0.17 |
| 983 | RLDPVTQDPERMCCK | 0.00 | 0.10 |

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| 984 | SSSCYTLQELR | 0.00 | 0.09 |
| 985 | IMDIIRAQEQSR | 0.00 | 0.08 |
| 986 | SQMMTDKCQDK | 0.00 | 0.07 |
| 987 | RNAFSAIKFGLNR | 0.00 | 0.07 |
| 988 | CPSSGSLLR | 0.00 | 0.07 |
| 989 | LNQMVFLGYTNAVK | 0.00 | 0.06 |
| 990 | LGCLIMLIR | 0.00 | 0.06 |
| 991 | PVVGRISGGGER | 0.00 | 0.05 |
| 992 | IEQSSPTHNGCPEKRPK | 0.00 | 0.04 |
| 993 | YLMHMDKK | 0.00 | 0.04 |
| 994 | SMFLDLTDCQTIMTCK | 0.00 | 0.04 |
| 995 | TIAECLADELINASR | 0.00 | 0.04 |
| 996 | IRPCFEKDKSQVR | 0.00 | 0.04 |
| 997 | AVFKDSFCR | 0.00 | 0.04 |
| 998 | MSASKIFTGYRALGYVSNHVPLVTR | 0.00 | 0.03 |
| 999 | GRGGGAIHGDR | 0.00 | 0.03 |
| 1000 | TRVSLQYMCQLISEIPR | 0.00 | 0.03 |
| 1001 | GGRGGMGGGR | 0.00 | 0.03 |
| 1002 | TLLRIFLHNHHGNPNK | 0.00 | 0.03 |
| 1003 | PSNATIVFKDPR | 0.00 | 0.03 |
| 1004 | VLLSTLRGALEEAKNR | 0.00 | 0.02 |
| 1005 | SFVMSAIIAEGVKPTLAELEK | 0.00 | 0.02 |
| 1006 | LGQSAVKNICMK | 0.00 | 0.02 |
| 1007 | RLLLFGILLMGSVSSRR | 0.00 | 0.02 |
| 1008 | AGTMSKK | 0.00 | 0.02 |
| 1009 | SEICDITSNMLATIVNVDVKDSLSEFRKMMP LCK | 0.00 | 0.02 |
| 1010 | DTVKPVMCAYK | 0.00 | 0.02 |
| 1011 | RLSEDDKK | 0.00 | 0.02 |
| 1012 | CNVKKT V | 0.00 | 0.02 |
| 1013 | LSDFGCAQVTPELR | 0.00 | 0.02 |
| 1014 | MAYTADSNAPLRDVKK | 0.00 | 0.02 |
| 1015 | RTIANYVMSR | 0.00 | 0.02 |
| 1016 | HVNKPNVSKSESLSSSKLNR | 0.00 | 0.02 |
| 1017 | LILESFGHLIPDNVKS LIMK | 0.00 | 0.02 |
| 1018 | KAAMARGSLYSFVPDR | 0.00 | 0.02 |
| 1019 | VTDKPNSNEMKK | 0.00 | 0.02 |
| 1020 | LVRGVSDCIGSNYSR | 0.00 | 0.01 |
| 1021 | VSPDATVEALLR | 0.00 | 0.01 |
| 1022 | NPDMSMSEAKT LIMK | 0.00 | 0.01 |
| 1023 | NYETKQSKK | 0.00 | 0.01 |
| 1024 | TKCMDIIEVVSIWEKREAMK | 0.00 | 0.01 |
| 1025 | EKMEVKAAQLAGEMASMKAR | 0.00 | 0.01 |
| 1026 | SQRVADMVDK | 0.00 | 0.01 |
| 1027 | CEARRVIFGK | 0.00 | 0.01 |
| 1028 | GWFPQALIDANMAKVLMDFLNDLR | 0.00 | 0.01 |
| 1029 | DISGVSPKCTDSK | 0.00 | 0.01 |
| 1030 | GTVRYKGPVATKK | 0.00 | 0.01 |

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| 1031 | KPSSPLR | 0.00 | 0.01 |
| 1032 | AKDKDTMSDIGGSSKK | 0.00 | 0.01 |
| 1033 | MMGNKLCAPLLSKK | 0.00 | 0.01 |
| 1034 | LDALKTMLAYPDVR | 0.00 | 0.01 |
| 1035 | VKICNPK | 0.00 | 0.01 |
| 1036 | GYQAIAAYHGVPACR | 0.00 | 0.01 |
| 1037 | IACSVSFLHGAMFHFIVCMMDR | 0.00 | 0.01 |
| 1038 | DSKKMYAMK | 0.00 | 0.01 |
| 1039 | SFSCRSNLAHHK | 0.00 | 0.01 |
| 1040 | VIVVAILVTGKAQCVCLTVP | 0.00 | 0.01 |
| 1041 | MCFCTFSSVRLRQQR | 0.00 | 0.00 |
| 1042 | ETKNTISHR | 0.00 | 0.00 |
| 1043 | KGGLASKCVDDQELQQLR | 0.00 | 0.00 |
| 1044 | ESFSPRSITTDQSQR | 0.00 | 0.00 |
| 1045 | XXKSMPK | 0.00 | 0.00 |
| 1046 | VPKYDNPTGISHYLILK | 0.00 | 0.00 |
| 1047 | ATERECATMNDMPYLSK | 0.00 | 0.00 |
| 1048 | NPDMSMSEAK | 0.00 | 0.00 |
| 1049 | SKSVDDFLDSDIDTNANCNSK | 0.00 | 0.00 |
| 1050 | YDIKVDHR | 0.00 | 0.00 |
| 1051 | HSKSTATKVDR | 0.00 | 0.00 |
| 1052 | EDILAYNQWLEGFSFGQKK | 0.00 | 0.00 |
| 1053 | DSGIVMTPPDSTTTPDVQR | 0.00 | 0.00 |
| 1054 | LSILYTNIPSGGSRSHAK | 0.00 | 0.00 |
| 1055 | KASPSKTSVEKSIVSSVPK | 0.00 | 0.00 |
| 1056 | CRSITSYFSAEGK | 0.00 | 0.00 |
| 1057 | SMTGETNIPDEDKMRLLR | 0.00 | 0.00 |
| 1058 | YMDFNENGSCVIGGNKCLSDKYIR | 0.00 | 0.00 |
| 1059 | SLDYGSTSAVVPQK | 0.00 | 0.00 |
| 1060 | AETKGKKSPPR | 0.00 | 0.00 |
| 1061 | MVQPTMDILQCDPK | 0.00 | 0.00 |
| 1062 | VSTQWMPQPLTPDQK | 0.00 | 0.00 |
| 1063 | INSMKVFLFLMILQMLK | 0.00 | 0.00 |
| 1064 | MVDIGKTASSKKK | 0.00 | 0.00 |
| 1065 | MTSKPTNSRVIK | 0.00 | 0.00 |
| 1066 | PSPGNYDR | 0.00 | 0.00 |
| 1067 | SQHTNQAVFSINHYAGK | 0.00 | 0.00 |
| 1068 | GRSVNLKSASYKVIR | 0.00 | 0.00 |
| 1069 | SLQQGQWVGVDYR | 0.00 | 0.00 |
| 1070 | KDDMEIVCERFTTSK | 0.00 | 0.00 |
| 1071 | EISTGANSSKRRPNAXNK | 0.00 | 0.00 |
| 1072 | MVLEDDGRFNFMLQPIR | 0.00 | 0.00 |
| 1073 | YEAKLQPDSEFSPQFK | 0.00 | 0.00 |
| 1074 | GGSGVPDFASIK | 0.00 | 0.00 |
| 1075 | TLKLETVTPDR | 0.00 | 0.00 |
| 1076 | NQQEKVAEMEQRIR | 0.00 | 0.00 |
| 1077 | LCEDFERDMK | 0.00 | 0.00 |
| 1078 | MPLSMCHK | 0.00 | 0.00 |
| 1079 | HTGKFMDGDDPDPKR | 0.00 | 0.00 |

Table S2. Effect of hdTIPs on B16F10 melanoma cell viability at 200 μ M after 48 and 72 h incubations, as assayed by MTT. The data were normalized by setting 100% equal to the viability of the untreated control group. The experiments were performed in triplicate and the %cell viabilities were shown in mean \pm S.D. format.

| Incubation time | B16F10 melanoma cell viability (%) after treated with hdTIPs | | | | | | | |
|-----------------|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | TIP1 | TIP2 | KNN1 | KNN2 | KNN3 | RF1 | RF2 | RF3 |
| 48 h | 95.61 \pm 8.64 | 95.90 \pm 8.63 | 90.47 \pm 4.93 | 93.53 \pm 2.25 | 91.58 \pm 5.73 | 93.87 \pm 6.46 | 95.43 \pm 8.90 | 94.18 \pm 2.33 |
| 72 h | 91.11 \pm 8.36 | 93.98 \pm 6.83 | 90.78 \pm 2.28 | 90.16 \pm 2.65 | 95.60 \pm 4.14 | 92.80 \pm 9.03 | 95.30 \pm 6.28 | 93.16 \pm 3.74 |

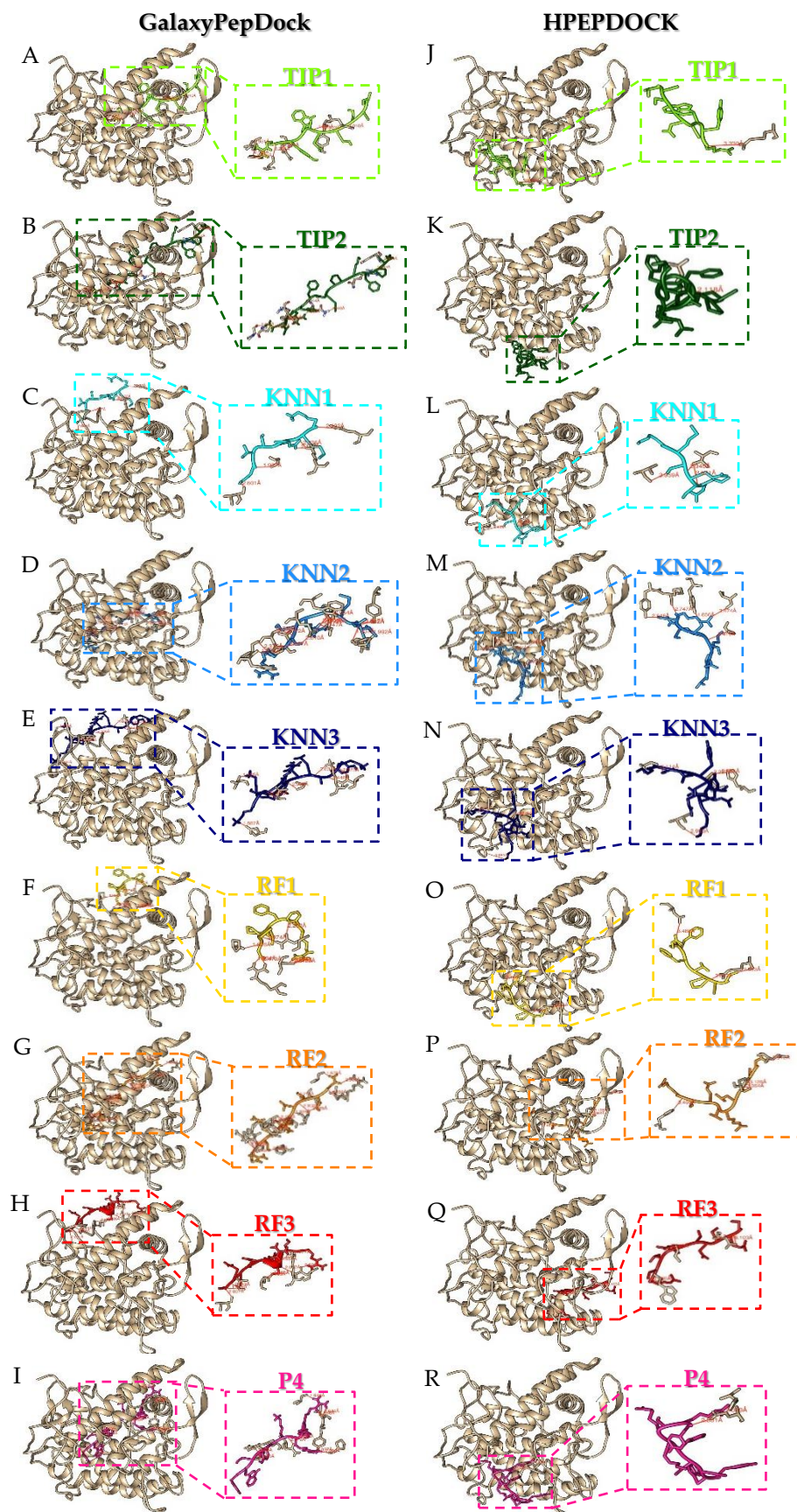


Figure S1. Molecular docking of hdTIPs to the tyrosinase (PDB: 2Y9X) from GalaxyPepDock (A-I) and HPEPDOCK (J-R). The tyrosinase is shaded in tan, and the peptide sequences are colored as labeled above. The hydrogen bonds are shown as red lines.

Table S3. List of hydrogen bonds observed from the molecular docking of peptides to the crystal structure of the tyrosinase (PDB: 2Y9X).

| GalaxyPepDock server | | | | HPEPDOCK server | | | |
|----------------------|------------------|---------------------|--------------|-----------------|------------------|---------------------|--------------|
| Peptides | Peptide Residues | Tyrosinase residues | Distance (Å) | Peptides | Peptide Residues | Tyrosinase residues | Distance (Å) |
| TIP1 | SER 3 | GLN 41 | 2.985 | TIP1 | ARG 9 | ARG 268 | 3.330 |
| | ARG 9 | CYS 297 | 3.235 | | | | |
| | ASP 5 | TYR 36 | 2.895 | | | | |
| | ALA 6 | TYR 36 | 2.826 | | | | |
| | ARG 9 | GLN 133 | 2.686 | | | | |
| | ARG 9 | GLU 98 | 2.836 | | | | |
| | ARG 9 | TYR 365 | 2.981 | | | | |
| | ARG 9 | TYR 365 | 2.815 | | | | |
| TIP2 | ALA 2 | ARG 38 | 2.956 | TIP2 | SER 1 | GLU 226 | 2.118 |
| | VAL 13 | CYS 83 | 3.704 | | | | |
| | PHE 9 | GLN 133 | 2.952 | | | | |
| | ASP 7 | GLN 133 | 2.931 | | | | |
| | SER 1 | TYR 165 | 3.064 | | | | |
| | ARG 11 | TYR 365 | 2.875 | | | | |
| | ARG 11 | GLN 133 | 2.798 | | | | |
| | ASN 12 | GLU 98 | 2.693 | | | | |
| KNN1 | ASN 12 | PRO 91 | 3.356 | KNN1 | ILE 2 | THR 261 | 2.912 |
| | LYS 7 | GLN 114 | 2.992 | | | | |
| | GLU 4 | LYS 129 | 3.001 | | | | |
| | GLU 4 | LYS 129 | 3.108 | | | | |
| | ASN 1 | GLY 15 | 2.765 | | | | |
| KNN2 | ASN 1 | THR 360 | 3.463 | KNN2 | SER 9 | TYR 78 | 2.646 |
| | THR 1 | TYR 36 | 2.861 | | | | |
| | SER 8 | HIS 94 | 2.867 | | | | |
| | MET 4 | TRP 101 | 2.960 | | | | |
| | SER 2 | PRO 290 | 2.865 | | | | |
| | GLN 3 | TYR 36 | 2.707 | | | | |
| | GLN 3 | ILE 23 | 2.963 | | | | |
| | SER 5 | GLU 98 | 3.018 | | | | |
| | ARG 6 | GLN 133 | 2.829 | | | | |
| | ARG 6 | GLN 133 | 3.246 | | | | |
| | ARG 6 | GLN 133 | 2.890 | | | | |
| | SER 7 | ASP 300 | 2.900 | | | | |
| | SER 8 | HIS 94 | 2.928 | | | | |
| | SER 8 | GLU 98 | 3.357 | | | | |
| | SER 9 | PHE 90 | 2.724 | | | | |
| | ARG 10 | PRO 91 | 3.329 | | | | |
| KNN3 | ALA 9 | GLN 126 | 3.203 | KNN3 | LYS 2 | ALA 323 | 3.114 |
| | GLU 8 | LYS 129 | 3.059 | | | | |
| | LYS 1 | ASP 357 | 2.894 | | | | |
| | LYS 2 | ASN 346 | 2.964 | | | | |
| | ASN 3 | VAL 11 | 3.002 | | | | |
| | VAL 6 | GLY 15 | 2.919 | | | | |
| | LYS 11 | GLN 126 | 2.941 | | | | |
| RF1 | ALA 2 | GLN 126 | 3.060 | RF1 | SER 1 | ARG 268 | 3.093 |
| | SER 1 | ARG 132 | 3.238 | | | | |
| | | | | | ARG 7 | ASN 81 | 3.488 |

| | | | | | | | |
|-----|--------|---------|-------|-----|-------|---------|-------|
| | SER 1 | ARG 132 | 2.863 | | ALA 2 | ARG 268 | 2.812 |
| | SER 1 | PRO 14 | 2.798 | | | | |
| | PHE 6 | GLN 126 | 3.091 | | | | |
| | ARG 7 | ASP 130 | 2.839 | | | | |
| | ARG 7 | ASP 130 | 3.133 | | | | |
| | ARG 7 | ASP 130 | 3.184 | | | | |
| RF2 | VAL 6 | ARG 20 | 2.711 | RF2 | ASN 1 | GLU 161 | 2.512 |
| | ASN 1 | ARG 38 | 3.538 | | SER 3 | GLN 153 | 3.064 |
| | ARG 9 | ARG 95 | 2.927 | | ARG 9 | HIS 390 | 3.469 |
| | ARG 9 | ARG 95 | 2.852 | | SER 3 | GLN 153 | 3.128 |
| | LEU 4 | GLN 133 | 2.772 | | | | |
| | SER 2 | GLN 133 | 2.832 | | | | |
| | SER 3 | GLN 133 | 2.937 | | | | |
| | ASN 1 | LEU 35 | 2.867 | | | | |
| | ASN 1 | ALA 109 | 2.846 | | | | |
| | SER 3 | LEU 131 | 2.894 | | | | |
| | ARG 5 | GLU 98 | 3.142 | | | | |
| | ARG 5 | TYR 97 | 2.864 | | | | |
| | SER 8 | HIS 296 | 2.852 | | | | |
| | ARG 9 | HIS 94 | 3.132 | | | | |
| RF3 | SER 7 | GLU 16 | 3.123 | RF3 | GLN 2 | ASP 152 | 3.103 |
| | SER 7 | GLN 126 | 2.930 | | ARG 6 | GLY 149 | 2.940 |
| | ARG 6 | LYS 129 | 2.959 | | SER 9 | TRP 141 | 3.140 |
| | SER 9 | LYS 129 | 2.759 | | GLN 2 | ASP 152 | 2.719 |
| | SER 1 | VAL 11 | 2.930 | | | | |
| | SER 1 | THR 360 | 2.986 | | | | |
| | GLN 2 | VAL 11 | 2.827 | | | | |
| | SER 7 | GLU 16 | 3.240 | | | | |
| | ARG 10 | GLN 126 | 3.305 | | | | |
| P4 | SER 7 | ARG 20 | 2.714 | P4 | TYR 1 | GLU 189 | 2.351 |
| | TYR 1 | GLN 133 | 2.780 | | ARG 2 | HIS 285 | 2.079 |
| | ARG 2 | LEU 35 | 2.756 | | | | |
| | ARG 2 | ALA 109 | 2.774 | | | | |
| | ARG 2 | LEU 35 | 3.390 | | | | |
| | ARG 4 | TYR 36 | 3.016 | | | | |
| | ARG 4 | PRO 175 | 3.364 | | | | |
| | LYS 5 | GLN 133 | 2.825 | | | | |
| | SER 7 | TYR 365 | 2.699 | | | | |

Table S4. Summary of intra-chain and inter-chain contacts with a frequency 50-100% in 10 models found by RING at Distance thresholds (Å): H-bond 3.5, Ionic 4, π -cation 5, π - π stacking 6.5, Disulfide 2.5, Van Der Waals 0.5.

| Contact frequency | KNN1 | | RF1 | | RF3 | | TIP2 | |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | Intra | Inter | Intra | Inter | Intra | Inter | Intra | Inter |
| H-bond | 321 | 3 | 318 | 2 | 322 | 3 | 297 | 9 |
| π - π Stacking | 22 | 0 | 19 | 0 | 22 | 0 | 30 | 4 |
| π -Cation | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Ionic | 9 | 0 | 5 | 0 | 9 | 0 | 8 | 0 |
| Disulfide | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Van der Waals | 185 | 1 | 172 | 0 | 203 | 1 | 133 | 18 |