**Supplementary Material**

**Reliable structural information for rational design of benzoxazole type potential cholesteryl ester transfer protein (CETP) inhibitors through multiple validated modelling techniques**

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**Supplementary Table 1** List of CETP inhibitors used in QSAR studies



|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Cpda** | **R1** | **R2** | **R3** | **R4** | **Ar/R** | **X** | **Y** | **IC50 (μM)** | ***pIC50*** |
| **1** | H | H | H | H | 2-MePh | O | CO | 13.000 | 4.886 |
| **2** | H | Cl | H | H | 2-MePh | O | CO | 1.100 | 5.959 |
| **3** | H | H | H | Cl | 2-MePh | O | CO | 21.000 | 4.678 |
| **4** | Me | H | H | H | 2-MePh | O | CO | 23.000 | 4.638 |
| **5** | H | Me | H | H | 2-MePh | O | CO | 2.000 | 5.699 |
| **6** | H | NO2 | H | H | 2-MePh | O | CO | 0.940 | 6.027 |
| **7** | H | H | NO2 | H | 2-MePh | O | CO | 3.200 | 5.495 |
| **8** | H | F | H | H | 2-MePh | O | CO | 1.900 | 5.721 |
| **9** | H | H | F | H | 2-MePh | O | CO | 7.500 | 5.125 |
| **10** | H | CN | H | H | 2-MePh | O | CO | 0.130 | 6.886 |
| **11** | H | H | CN | H | 2-MePh | O | CO | 0.410 | 6.387 |
| **12** | H | H | H | CN | 2-MePh | O | CO | 5.200 | 5.284 |
| **13** | H | Br | H | H | 2-MePh | O | CO | 1.300 | 5.886 |
| **14** | H | OMe | H | H | 2-MePh | O | CO | 0.840 | 6.076 |
| **15** | H | SMe | H | H | 2-MePh | O | CO | 2.900 | 5.538 |
| **16** | H | COMe | H | H | 2-MePh | O | CO | 1.300 | 5.886 |
| **17** | H | CH(OH)Me | H | H | 2-MePh | O | CO | 3.400 | 5.469 |
| **18** | H | Vinyl | H | H | 2-MePh | O | CO | 2.800 | 5.553 |
| **19** | H | Ethynyl | H | H | 2-MePh | O | CO | 2.000 | 5.699 |
| **20** | H | CN | H | H | 2-MePh | O | CO | 38.000 | 4.420 |
| **21** | H | CN | Me | H | 2-MePh | O | CO | 1.900 | 5.721 |
| **22** | H | Br | H | Me | 2-MePh | O | CO | 0.510 | 6.292 |
| **23** | H | CN | H | Me | 2-MePh | O | CO | 0.060 | 7.222 |
| **24** | H | CN | H | CN | 2-MePh | O | CO | 0.270 | 6.569 |
| **25** | H | Cl | H | NO2 | 2-MePh | O | CO | 0.570 | 6.244 |
| **26** | H | Br | H | F | 2-MePh | O | CO | 0.910 | 6.041 |
| **27** | H | CN | H | F | 2-MePh | O | CO | 0.062 | 7.208 |
| **28** | H | Br | H | COMe | 2-MePh | O | CO | 0.380 | 6.420 |
| **29** | H | CN | H | COMe | 2-MePh | O | CO | 0.086 | 7.066 |
| **30** | H | Br | H | CH(Me)OH | 2-MePh | O | CO | 0.059 | 7.229 |
| **31** | H | CN | H | CH(Me)OH | 2-MePh | O | CO | 0.046 | 7.337 |
| **32** | H | Br | H | C(Me)2OH | 2-MePh | O | CO | 0.044 | 7.357 |
| **33** | H | CN | H | C(Me)2OH | 2-MePh | O | CO | 0.028 | 7.553 |
| **34** | H | Br | H | C(Me)(Et)OH | 2-MePh | O | CO | 0.110 | 6.959 |
| **35** | H | CN | H | C(Me)(Et)OH | 2-MePh | O | CO | 0.031 | 7.509 |
| **36** | H | Br | H | C(Me)(n-Pr)OH | 2-MePh | O | CO | 0.200 | 6.699 |
| **37** | H | CN | H | C(Me)(n-Pr)OH | 2-MePh | O | CO | 0.058 | 7.237 |
| **38** | H | Br | H | C(Me)(i-Pr)OH | 2-MePh | O | CO | 0.210 | 6.678 |
| **39** | H | CN | H | C(Me)(i-Pr)OH | 2-MePh | O | CO | 0.080 | 7.097 |
| **40** | H | Br | H | C(Me)(Ethynyl)OH | 2-MePh | O | CO | 0.094 | 7.027 |
| **41** | H | Br | H | C(Me)(1-Propynyl)OH | 2-MePh | O | CO | 0.210 | 6.678 |
| **42** | H | CN | H | C(Me)(1-Propynyl)OH | 2-MePh | O | CO | 0.160 | 6.796 |
| **43** | H | H | H | C(Me)2OH | 2-MePh | O | CO | 0.440 | 6.357 |
| **44** | H | CN | H | i-Pr | 2-O-i-Pr,5-FPh-(2-Pyr) | CH | CONHCH2 | 0.013 | 7.886 |
| **45** | H | Cl | H | H | 2-MePh | O | CO | 19.310 | 4.714 |
| **46** | H | Cl | H | H | H | O | CO | 4.230 | 5.374 |
| **47** | H | Cl | H | H | 2-EtPh | O | CO | 2.587 | 5.587 |
| **48** | H | Cl | H | H | 2-PrPh | O | CO | 2.700 | 5.569 |
| **49** | H | Cl | H | H | 2-CF3Ph | O | CO | 6.390 | 5.194 |
| **50** | H | Cl | H | H | 2-ClPh | O | CO | 2.150 | 5.668 |
| **51** | H | Cl | H | H | 2-NO2Ph | O | CO | 4.396 | 5.357 |
| **52** | H | Cl | H | H | 3-CF3Ph | O | CO | 1.773 | 5.751 |
| **53** | H | Cl | H | H | 3-ClPh | O | CO | 1.248 | 5.904 |
| **54** | H | Cl | H | H | 3-FPh | O | CO | 1.994 | 5.700 |
| **55** | H | Cl | H | H | 3-OMePh | O | CO | 12.880 | 4.890 |
| **56** | H | Cl | H | H | 3-NO2Ph | O | CO | 26.490 | 4.577 |
| **57** | H | Cl | H | H | 4-CF3Ph | O | CO | 0.810 | 6.092 |
| **58** | H | Cl | H | H | 4-ClPh | O | CO | 6.810 | 5.167 |
| **59** | H | Cl | H | H | 4-FPh | O | CO | 1.774 | 5.751 |
| **60** | H | Cl | H | H | 4-OMePh | O | CO | 4.570 | 5.340 |
| **61** | H | Cl | H | H | 4-NO2Ph | O | CO | 2.206 | 5.656 |
| **62** | H | Cl | H | H | H | NH | CO | 8.132 | 5.090 |
| **63** | H | Cl | H | H | H | OCH2 | CO | 6.537 | 5.185 |
| **64** | H | Cl | H | H | H | NHCH2 | CO | 18.080 | 4.743 |
| **65** | H | CN | H | H | 2-MeBnz | O | CO | 1.182 | 5.927 |
| **66** | H | CN | H | H | 2-CF3Bnz | O | CO | 0.505 | 6.297 |
| **67** | H | CN | H | H | Et | O | CO | 1.375 | 5.862 |
| **68** | H | CN | H | H | i-Pr | O | CO | 0.613 | 6.213 |
| **69** | H | CN | H | H | t-But | O | CO | 0.132 | 6.879 |
| **70** | H | CN | H | H | CH(CF3)2 | O | CO | 0.094 | 7.027 |
| **71** | H | CN | H | H | C(Me)2CF3 | O | CO | 0.051 | 7.292 |
| **72** | H | CN | H | H | C(CF3)2Me | O | CO | 0.044 | 7.357 |
| **73** | H | CN | H | H | C(CF3)3 | O | CO | 0.151 | 6.821 |
| **74** | H | H | H | H | Ph | O | CH2 | 75.900 | 4.120 |
| **75** | H | CN | H | H | i-Pr | O | CH2 | 0.890 | 6.051 |
| **76** | H | CN | H | H | C(CF3)2Me | O | CH2 | 0.151 | 6.821 |
| **77** | H | CN | H | i-Pr | 2-i-PrPh-(2-Pyr) | CH | CONHCH2 | 0.019 | 7.721 |
| **78** | H | CN | H | H | c-Pr | O | CO | 0.474 | 6.324 |
| **79** | H | CN | H | H | c-Pent | O | CO | 0.280 | 6.553 |
| **80** | H | CN | H | H | c-Hex | O | CO | 0.146 | 6.836 |
| **81** | H | CN | H | H | c-Hept | O | CO | 0.092 | 7.036 |
| **82** | H | CN | H | H | 4-MeBicyclo[3.2.2]Nonyl | O | CO | 0.072 | 7.143 |
| **83** | H | CN | H | H | Tetrahydroonapthyl | O | CO | 0.115 | 6.939 |
| **84** | H | CN | H | H | pyran | O | CO | 1.253 | 5.902 |
| **85** | H | CN | H | i-Pr | 2-O-i-ButPh-(2-Pyr) | CH | CONHCH2 | 0.031 | 7.509 |
| **86** | H | CN | H | H | Piperidine-N-Boc | O | CO | 0.492 | 6.308 |
| **87** | H | CN | H | Me | Piperidine-N-Boc | CH2 | CO | 1.094 | 5.961 |
| **88** | H | CN | H | Me | Piperidine-N-Boc | -- | CO | 0.757 | 6.121 |
| **89** | H | CN | H | Me | Piperazine-N-Boc | -- | CO | 0.064 | 7.194 |
| **90** | H | CN | H | Me | Piperidine-N-Boc | O | CO | 0.091 | 7.041 |
| **91** | H | CN | H | Me | Piperidine-N-COOMe | O | CO | 0.382 | 6.418 |
| **92** | H | CN | H | Me | Piperidine-N-COOEt | O | CO | 0.254 | 6.595 |
| **93** | H | CN | H | Me | Piperidine-N-COO-i-Pr | O | CO | 0.160 | 6.796 |
| **94** | H | CN | H | Me | Piperidine-N-COOCH2-t-But | O | CO | 0.111 | 6.955 |
| **95** | H | CN | H | Me | Piperidine-N-COOC(Me)­2Et | O | CO | 0.094 | 7.027 |
| **96** | H | CN | H | Me | Piperidine-N-COOPh | O | CO | 0.221 | 6.656 |
| **97** | H | CN | H | Me | Piperidine-N-COOBnz | O | CO | 0.130 | 6.886 |
| **98** | H | CN | H | Me | Piperidine-N-CH2COO-t-But | O | CO | 0.181 | 6.742 |
| **99** | H | CN | H | Me | Piperidine-N-(CH2)2-t-But | O | CO | 0.228 | 6.642 |
| **100** | H | CN | H | Me | Piperidine-N-COCH2-t-But | O | CO | 0.370 | 6.432 |
| **101** | H | CN | H | Me | Piperidine-N-CON-t-But | O | CO | 1.301 | 5.886 |
| **102** | H | CN | H | Me | Piperidine-N-SO2-n-But | O | CO | 0.207 | 6.684 |
| **103** | H | CN | H | Me | Piperidine-N-SO2Ph | O | CO | 0.336 | 6.474 |
| **104** | H | CN | H | Me | Piperidine-N-SO2Bnz | O | CO | 0.169 | 6.772 |
| **105** | H | CN | H | Me | p-CF3Ph | N | (CH2)3 | 0.975 | 6.011 |
| **106** | H | CN | H | Me | p-CF3Ph | N | CCCH2 | 2.172 | 5.663 |
| **107** | H | CN | H | Me | p-CF3Ph | N | CO(CH2)2 | 2.053 | 5.688 |
| **108** | H | CN | H | Me | p-CF3Ph | N | CH2COCH2 | 5.741 | 5.241 |
| **109** | H | CN | H | Me | p-CF3Ph | N | CO | 4.029 | 5.395 |
| **110** | H | CN | H | Me | p-CF3Ph | N | OCH2 | 4.554 | 5.342 |
| **111** | H | CN | H | Me | p-CF3Ph | N | C(OH)(CH2)2 | 2.249 | 5.648 |
| **112** | H | CN | H | Me | p-CF3Ph | N | CH2C(OH)CH2 | 0.874 | 6.058 |
| **113** | H | CN | H | Me | p-CF3Ph | N | CH2C(OMe)CH2 | 8.940 | 5.049 |
| **114** | H | CN | H | Me | p-CF3Ph | N | NHCH2C(OH)CH2 | 18.760 | 4.727 |
| **115** | H | CN | H | Me | p-CF3Ph | N | 2-OxoPyrrolid | 2.742 | 5.562 |
| **116** | H | CN | H | Me | p-CF3Ph | CH | CONH(CH2)2 | 11.600 | 4.936 |
| **117** | H | CN | H | Me | p-CF3Ph | CH | CONHCH2 | 0.300 | 6.523 |
| **118** | H | CN | H | Me | p-CF3Ph | CH | CON(Me)CH2 | 2.612 | 5.583 |
| **119** | H | CN | H | c-Pr | p-CF3-(2-Pyr) | CH | CONHCH2 | 0.243 | 6.614 |
| **120** | H | CN | H | CF3 | p-CF3-(2-Pyr) | CH | CONHCH2 | 3.186 | 5.497 |
| **121** | H | CN | H | t-But | p-CF3-(2-Pyr) | CH | CONHCH2 | 0.198 | 6.703 |
| **122** | H | CN | H | C(=CH­2)Me | p-CF3-(2-Pyr) | CH | CONHCH2 | 0.131 | 6.883 |
| **123** | H | CN | H | i-Pr | p-CF3-(2-Pyr) | CH | CONHCH2 | 0.040 | 7.398 |
| **124** | H | CN | H | i-Pr | 2-Pyr | CH | CONHCH2 | 0.114 | 6.943 |
| **125** | H | CN | H | i-Pr | 3-CF3-(2-Pyr) | CH | CONHCH2 | 0.037 | 7.432 |
| **126** | H | CN | H | i-Pr | 3-OMe-(2-Pyr) | CH | CONHCH2 | 0.110 | 6.959 |
| **127** | H | CN | H | i-Pr | 5-CF3-(2-Pyr) | CH | CONHCH2 | 0.061 | 7.215 |
| **128** | H | CN | H | i-Pr | 4-COOMe-(2-Pyr) | CH | CONHCH2 | 0.114 | 6.943 |
| **129** | H | CN | H | i-Pr | 3-COOMe-(2-Pyr) | CH | CONHCH2 | 0.306 | 6.514 |
| **130** | H | CN | H | i-Pr | 4-Br-(2-Pyr) | CH | CONHCH2 | 0.223 | 6.652 |
| **131** | H | CN | H | i-Pr | 4-Vinyl-(2-Pyr) | CH | CONHCH2 | 0.229 | 6.640 |
| **132** | H | CN | H | i-Pr | 4-Ph-(2-Pyr) | CH | CONHCH2 | 0.043 | 7.367 |
| **133** | H | CN | H | i-Pr | 4-MePh-(2-Pyr) | CH | CONHCH2 | 0.048 | 7.319 |
| **134** | H | CN | H | i-Pr | 3-MePh-(2-Pyr) | CH | CONHCH2 | 0.039 | 7.409 |
| **135** | H | CN | H | i-Pr | 3-Cl,5-OMePh-(2-Pyr) | CH | CONHCH2 | 0.047 | 7.328 |
| **136** | H | CN | H | i-Pr | 2-OMe,3-i-Pr,4-FPh-(2-Pyr) | CH | CONHCH2 | 0.024 | 7.620 |
| **137** | H | CN | H | i-Pr | 2-O-i-Pr,5-MePh-(2-Pyr) | CH | CONHCH2 | 0.022 | 7.658 |
| **138** | H | CN | H | i-Pr | 2-O-i-Pr,5-CF3Ph-(2-Pyr) | CH | CONHCH2 | 0.028 | 7.553 |
| **139** | H | CN | H | i-Pr | 2-OBnz,5-CF3Ph-(2-Pyr) | CH | CONHCH2 | 0.413 | 6.384 |
| **140** | H | CN | H | i-Pr | 2-O-i-PrPh-(2-Pyr) | CH | CONHCH2 | 0.029 | 7.538 |

a Compound number.

**Supplementary Table S2A.** Experimental inhibitory activity and activity scale (assigned and estimated) of external set molecules (set 1) using hypothesis 1 against CETP.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Compound number** | **Experimental inhibitory activity** | **Activity scale** | **Estimated scale** | **Fit value** |
| **1** | 13000 | p | p | 5.548 |
| **9** | 7500 | p | p | 5.586 |
| **15** | 2900 | p | ppp | 7.212 |
| **24** | 270 | pp | pp | 6.502 |
| **25** | 570 | pp | p | 5.783 |
| **27** | 62 | ppp | p | 5.695 |
| **29** | 86 | ppp | ppp | 7.135 |
| **30** | 59 | ppp | p | 5.650 |
| **31** | 46 | ppp | p | 5.670 |
| **34** | 110 | pp | pp | 6.036 |
| **35** | 31 | ppp | ppp | 7.072 |
| **38** | 210 | pp | pp | 6.029 |
| **40** | 94 | ppp | p | 5.905 |
| **42** | 160 | pp | pp | 6.557 |
| **43** | 440 | pp | p | 5.695 |
| **45** | 19310 | p | p | 4.870 |
| **50** | 2150 | p | p | 5.996 |
| **51** | 4396 | p | pp | 6.334 |
| **52** | 1773 | p | p | 4.942 |
| **54** | 1253 | p | ppp | 7.043 |
| **54** | 1994 | p | pp | 6.146 |
| **55** | 12880 | p | p | 5.854 |
| **56** | 26490 | p | pp | 6.784 |
| **59** | 1774 | p | pp | 6.128 |
| **61** | 2206 | p | p | 5.397 |
| **62** | 8132 | p | p | 4.867 |
| **63** | 6537 | p | p | 4.847 |
| **64** | 18080 | p | pp | 6.017 |
| **65** | 1182 | p | ppp | 7.291 |
| **69** | 132 | pp | ppp | 7.074 |
| **73** | 151 | pp | ppp | 7.420 |
| **75** | 890 | pp | p | 4.280 |
| **77** | 19 | ppp | ppp | 7.065 |
| **78** | 474 | pp | pp | 6.627 |
| **79** | 280 | pp | ppp | 7.594 |
| **80** | 146 | pp | p | 5.891 |
| **86** | 492 | pp | pp | 6.803 |
| **87** | 1094 | p | ppp | 7.518 |
| **90** | 91 | ppp | p | 5.722 |
| **92** | 254 | pp | p | 5.403 |
| **93** | 160 | pp | pp | 6.770 |
| **95** | 94 | ppp | ppp | 7.028 |
| **97** | 130 | pp | ppp | 7.625 |
| **100** | 370 | pp | p | 5.715 |
| **103** | 336 | pp | ppp | 7.370 |
| **106** | 2172 | p | p | 4.438 |
| **109** | 4029 | p | pp | 6.622 |
| **110** | 4554 | p | p | 5.265 |
| **112** | 874 | pp | pp | 6.525 |
| **113** | 8940 | p | p | 5.169 |
| **116** | 11600 | p | pp | 6.043 |
| **118** | 2612 | p | pp | 7.009 |
| **122** | 131 | pp | pp | 6.075 |
| **125** | 37 | ppp | ppp | 7.112 |
| **127** | 61 | ppp | ppp | 7.017 |
| **128** | 114 | pp | ppp | 7.176 |
| **129** | 306 | pp | ppp | 7.217 |
| **134** | 39 | ppp | pp | 6.993 |
| **135** | 47 | ppp | pp | 6.792 |
| **139** | 413 | pp | ppp | 7.299 |

CETP inhibitory activity scale: ppp, <100 nM (highly active); pp, >100-1000 nM (moderately active); p, >1000 nM (inactive).

**Supplementary Table S2B.** Experimental inhibitory activity and activity scale (assigned and estimated) of external set molecules (set 2) using hypothesis 1 against CETP.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Compound number** | **Experimental inhibitory activity** | **Activity scale** | **Estimated scale** | **Fit value** |
| **2** | 1100.0 | p | p | 5.688 |
| **3** | 21000.0 | p | p | 5.799 |
| **4** | 23000.1 | p | p | 5.619 |
| **6** | 940.0 | pp | pp | 6.330 |
| **7** | 3200.0 | p | ppp | 7.052 |
| **8** | 1900.0 | p | p | 5.507 |
| **11** | 410.0 | pp | ppp | 7.330 |
| **12** | 5200.0 | p | p | 5.639 |
| **13** | 1300.0 | p | p | 5.814 |
| **16** | 1300.0 | p | ppp | 7.057 |
| **18** | 2800.0 | p | pp | 6.018 |
| **20** | 37999.7 | p | p | 5.794 |
| **21** | 1900.0 | p | pp | 6.189 |
| **22** | 510.0 | pp | p | 5.716 |
| **26** | 910.0 | pp | p | 5.603 |
| **32** | 44.0 | ppp | p | 5.713 |
| **36** | 200.0 | pp | pp | 6.031 |
| **37** | 58.0 | ppp | pp | 6.996 |
| **41** | 210.0 | pp | p | 5.869 |
| **46** | 4230.0 | p | p | 4.859 |
| **48** | 2700.0 | p | pp | 6.016 |
| **49** | 6390.0 | p | pp | 6.069 |
| **53** | 1248.0 | p | p | 4.867 |
| **58** | 6810.1 | p | p | 5.103 |
| **60** | 4570.0 | p | p | 5.572 |
| **66** | 505.0 | pp | ppp | 7.267 |
| **67** | 1375.0 | p | p | 5.882 |
| **68** | 613.0 | pp | ppp | 7.276 |
| **70** | 94.0 | ppp | ppp | 7.137 |
| **71** | 51.0 | ppp | ppp | 7.274 |
| **76** | 151.0 | pp | p | 4.729 |
| **81** | 92.0 | ppp | pp | 6.176 |
| **82** | 72.0 | ppp | p | 5.466 |
| **83** | 115.0 | pp | p | 5.363 |
| **85** | 31.0 | ppp | pp | 6.113 |
| **88** | 757.0 | pp | ppp | 7.482 |
| **91** | 382.0 | pp | pp | 6.181 |
| **94** | 111.0 | pp | p | 5.781 |
| **96** | 221.0 | pp | p | 5.731 |
| **98** | 181.0 | pp | p | 5.470 |
| **99** | 228.0 | pp | p | 5.438 |
| **104** | 169.0 | pp | ppp | 7.188 |
| **105** | 975.0 | pp | p | 5.353 |
| **107** | 2053.0 | p | pp | 6.584 |
| **108** | 5741.0 | p | ppp | 7.196 |
| **114** | 18759.9 | p | p | 5.246 |
| **115** | 2742.0 | p | ppp | 7.032 |
| **117** | 300.0 | pp | ppp | 7.243 |
| **119** | 243.0 | pp | ppp | 7.217 |
| **120** | 3186.0 | p | pp | 6.725 |
| **121** | 198.0 | pp | ppp | 7.367 |
| **124** | 114.0 | pp | ppp | 7.122 |
| **126** | 110.0 | pp | ppp | 7.206 |
| **130** | 223.0 | pp | pp | 6.798 |
| **131** | 229.0 | pp | pp | 6.510 |
| **133** | 48.0 | ppp | pp | 6.985 |
| **136** | 24.0 | ppp | pp | 6.966 |
| **137** | 22.0 | ppp | pp | 6.894 |
| **138** | 28.0 | ppp | ppp | 7.175 |
| **140** | 29.0 | ppp | ppp | 7.121 |

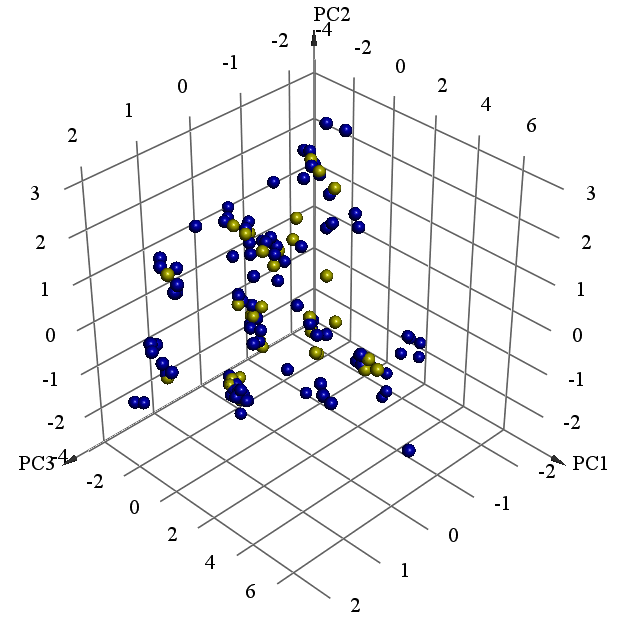
CETP inhibitory activity scale: ppp, <100 nM (highly active); pp, >100-1000 nM (moderately active); p, >1000 nM (inactive).

F:\001_CETP_02.11.18\Applicability domain JBSD_1.tif

**Supplementary Figure F1.** Domain of applicability:Residual activity *vs* compound number plot of the modeling set and two external set (set 1 and 2) compounds. Red circle: Modeling compounds; Blue square: External set 1 compounds; Light blue triangle: External set 2 compounds.

**Plot.tif**

**Supplementary Figure F2.** Observed (Obs.) *vs* Estimated (Est.) activity plots for the modeling set and two external set (set 1 and 2) compounds. Red circle: Modeling compounds; Blue square: External set 1 compounds; Light blue triangle: External set 2 compounds.

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**Supplementary Figure F3.** Three-dimensional principal component analysis (PCA) plot to justify uniformity of the test set and training set compounds. Blue Box: Training set compounds; Red Box: Test set compounds.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43634.png | | G1: 1335340087 17 out of 17 good Bayesian Score: 0.529 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43635.png | | G2: -1900138962 17 out of 17 good Bayesian Score: 0.529 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43636.png | | G3: 478776302 17 out of 17 good Bayesian Score: 0.529 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43637.png | | G4: -816015300 16 out of 16 good Bayesian Score: 0.527 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43638.png | | G5: -1192377395 16 out of 16 good Bayesian Score: 0.527 | |
| |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43639.png | | G6: 1249777739 16 out of 16 good Bayesian Score: 0.527 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43640.png | | G7: 1091272046 15 out of 15 good Bayesian Score: 0.524 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43641.png | | G8: -732925745 15 out of 15 good Bayesian Score: 0.524 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43642.png | | G9: 161259555 15 out of 15 good Bayesian Score: 0.524 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43643.png | | G10: -1391419750 15 out of 15 good Bayesian Score: 0.524 | |
| |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43644.png | | G11: 354222493 15 out of 15 good Bayesian Score: 0.524 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43645.png | | G12: 733491677 15 out of 15 good Bayesian Score: 0.524 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43646.png | | G13: 2025123907 10 out of 10 good Bayesian Score: 0.504 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43647.png | | G14: -276017898 9 out of 9 good Bayesian Score: 0.497 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43648.png | | G15: 1713037459 9 out of 9 good Bayesian Score: 0.497 | |
| |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43649.png | | G16: -300544019 18 out of 19 good Bayesian Score: 0.482 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43650.png | | G17: -2046305099 18 out of 19 good Bayesian Score: 0.482 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43651.png | | G18: -984322507 18 out of 19 good Bayesian Score: 0.482 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43652.png | | G19: -632795450 18 out of 19 good Bayesian Score: 0.482 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43653.png | | G20: 2014505765 18 out of 19 good Bayesian Score: 0.482 | |

**Supplementary Figure F4.** Good (G1-G20) molecular fingerprints for CETP inhibitors as identified by *ECFP\_6* fingerprint descriptor.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43654.png | | B1: -3028773 0 out of 16 good Bayesian Score: -2.306 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43655.png | | B2: -176494269 0 out of 16 good Bayesian Score: -2.306 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43656.png | | B3: -1025141132 0 out of 15 good Bayesian Score: -2.248 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43657.png | | B4: 30030456 0 out of 15 good Bayesian Score: -2.248 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43658.png | | B5: -150087964 0 out of 15 good Bayesian Score: -2.248 | |
| |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43659.png | | B6: 1346241644 0 out of 15 good Bayesian Score: -2.248 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43660.png | | B7: 1854732111 0 out of 15 good Bayesian Score: -2.248 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43661.png | | B8: 577592657 0 out of 15 good Bayesian Score: -2.248 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43662.png | | B9: -444352890 0 out of 15 good Bayesian Score: -2.248 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43663.png | | B10: -793949333 0 out of 9 good Bayesian Score: -1.805 | |
| |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43664.png | | B11: 1458946345 0 out of 9 good Bayesian Score: -1.805 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43665.png | | B12: 1708805596 0 out of 9 good Bayesian Score: -1.805 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43666.png | | B13: 342267039 0 out of 9 good Bayesian Score: -1.805 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43667.png | | B14: -817402818 1 out of 18 good Bayesian Score: -1.720 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43668.png | | B15: 99947387 1 out of 18 good Bayesian Score: -1.720 | |
| |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43669.png | | B16: 523172742 0 out of 7 good Bayesian Score: -1.600 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43670.png | | B17: 102821781 0 out of 7 good Bayesian Score: -1.600 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43671.png | | B18: 425403071 0 out of 6 good Bayesian Score: -1.479 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43672.png | | B19: -176455838 1 out of 13 good Bayesian Score: -1.428 | | |  | | --- | | C:\Users\Tarun Jha\Documents\Discovery Studio Client\Results\CreateBayesianModel_2016_07_18_131837_170\Output\GoodAndBadFingerprints\images\image43673.png | | B20: -1809812284 1 out of 13 good Bayesian Score: -1.428 | |

**Supplementary Figure F5.** Bad (B1-B20) molecular fingerprints for CETP inhibitors as identified by *ECFP\_6* fingerprint descriptor.