

## Supporting information

Structure-Activity Relationships for a Novel Series of Citalopram (1-(3-(dimethylamino)propyl)-1-(4-fluorophenyl)-1,3-dihydroisobenzofuran-5-carbonitrile) Analogues at Monoamine Transporters

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### Supporting material

Elemental analysis results:

**3-(5-Cyano-1-(4-fluorophenyl)-1,3-dihydroisobenzofuran-1-yl)-N,N-**

**dimethylpropan-1-amine, citalopram (1).** Anal. Calcd. For oxalate salt

(C<sub>20</sub>H<sub>21</sub>FN<sub>2</sub>O·C<sub>2</sub>H<sub>2</sub>O<sub>4</sub>) C, 63.76; H, 5.59; N, 6.76. Found: C, 63.63; H, 5.55; N, 6.73.

**(S)-(+)-3-(5-Cyano-1-(4-fluorophenyl)-1,3-dihydroisobenzofuran-1-yl)-N,N-**

**dimethylpropan-1-amine, escitalopram (S-1).** Anal. Calcd. For oxalate salt

(C<sub>20</sub>H<sub>21</sub>FN<sub>2</sub>O·C<sub>2</sub>H<sub>2</sub>O<sub>4</sub>) C, 63.76; H, 5.59; N, 6.76. Found: C, 63.59; H, 5.60; N, 6.81.

**(R)-(-)-3-(5-Cyano-1-(4-fluorophenyl)-1,3-dihydroisobenzofuran-1-yl)-N,N-**

**dimethylpropan-1-amine (R-1).** Anal. Calcd. For oxalate salt (C<sub>20</sub>H<sub>21</sub>FN<sub>2</sub>O·C<sub>2</sub>H<sub>2</sub>O<sub>4</sub>·1/4

H<sub>2</sub>O) C, 63.08; H, 5.65; N, 6.69. Found: C, 63.05; H, 5.57; N, 6.60.

**3-(5-bromo-1-(4-fluorophenyl)-1,3-dihydroisobenzofuran-1-yl)-N,N-**

**dimethylpropan-1-amine (5).** Anal. Calcd. For oxalate salt (C<sub>19</sub>H<sub>21</sub>BrFO·C<sub>2</sub>H<sub>2</sub>O<sub>4</sub>) C,

53.86; H, 4.95; N, 2.99. Found: C, 53.64; H, 4.95; N, 2.95.

**(S)-(+)-3-(5-bromo-1-(4-fluorophenyl)-1,3-dihydroisobenzofuran-1-yl)-N,N-**

**dimethylpropan-1-amine (S-5).** Anal. Calcd. For oxalate salt

(C<sub>19</sub>H<sub>21</sub>BrFNO·C<sub>2</sub>H<sub>2</sub>O<sub>4</sub>·H<sub>2</sub>O) C, 52.15; H, 4.85; N, 2.87. Found: C, 51.86; H, 5.18; N, 2.88.

**(R)-(-)-3-(5-bromo-1-(4-fluorophenyl)-1,3-dihydroisobenzofuran-1-yl)-N,N-**

**dimethylpropan-1-amine (R-5).** Anal. Calcd. For oxalate salt (C<sub>19</sub>H<sub>21</sub>BrFNO·C<sub>2</sub>H<sub>2</sub>O<sub>4</sub>)

C, 53.86; H, 4.95; N, 2.99. Found: C, 53.82; H, 4.97; N, 2.95.

**3-(4-Bromo-1-(4-fluorophenyl)-1,3-dihydroisobenzofuran-1-yl)-N,N-**

**dimethylpropan-1-amine (6).** Anal. Calcd. For oxalate salt (C<sub>19</sub>H<sub>21</sub>BrFNO·C<sub>2</sub>H<sub>2</sub>O<sub>4</sub>) C,

53.86; H, 4.95; N, 2.99. Found: C, 53.57; H, 4.89; N, 2.95.

**3-(1-(4-Fluorophenyl)-5-phenyl-1,3-dihydroisobenzofuran-1-yl)-N,N-**

**dimethylpropan-1-amine (7).** Anal. Calcd. For oxalate salt (C<sub>25</sub>H<sub>26</sub>FNO·1/2C<sub>2</sub>H<sub>2</sub>O<sub>4</sub>·3/8

H<sub>2</sub>O) C, 73.09; H, 6.55; N, 3.28. Found: C, 73.07; H, 6.48; N, 3.39.

**3-(5-(3-Amino-phenyl)-1-(4-fluorophenyl)-1,3-dihydroisobenzofuran-1-yl)-N,N-**

**dimethylpropan-1-amine (8).** Anal. Calcd. For oxalate salt (C<sub>25</sub>H<sub>27</sub>FN<sub>2</sub>O·C<sub>2</sub>H<sub>2</sub>O<sub>4</sub>·1/2

H<sub>2</sub>O) C, 66.25; H, 6.18; N, 5.72. Found: C, 66.31; H, 6.10; N, 5.61.

**(E)-3-(1-(4-Fluorophenyl)-5-styryl-1,3-dihydroisobenzofuran-1-yl)-N,N-**

**dimethylpropan-1-amine (9).** Anal. Calcd. For oxalate salt (C<sub>27</sub>H<sub>28</sub>FNO·C<sub>2</sub>H<sub>2</sub>O<sub>4</sub>·1/2

H<sub>2</sub>O) C, 69.59; H, 6.24; N, 2.79. Found: C, 69.49; H, 6.01; N, 2.82.

**(S)-(+)-(E)-3-(1-(4-Fluorophenyl)-5-styryl-1,3-dihydroisobenzofuran-1-yl)-N,N-**

**dimethylpropan-1-amine (S-9).** Anal. Calcd. For oxalate salt (C<sub>27</sub>H<sub>28</sub>FNO·C<sub>2</sub>H<sub>2</sub>O<sub>4</sub>·H<sub>2</sub>O)

C, 68.36; H, 6.33; N, 2.75. Found: C, 68.86; H, 6.06; N, 2.79.

**(S)-(+)-(E)-3-(1-(4-Fluorophenyl)-5-styryl-1,3-dihydroisobenzofuran-1-yl)-N,N-dimethylpropan-1-amine (R-9).** Anal. Calcd. For oxalate salt ( $C_{27}H_{28}FNO \cdot C_2H_2O_4 \cdot H_2O$ ) C, 68.36; H, 6.33; N, 2.75. Found: C, 68.26; H, 6.08; N, 2.74.

**3-(5-(3'-Cyano-phenyl)-1-(4-fluorophenyl)-1,3-dihydroisobenzofuran-1-yl)-N,N-dimethylpropan-1-amine (10).** Anal. Calcd. For oxalate salt ( $C_{26}H_{25}FN_2O \cdot C_2H_2O_4 \cdot 1/4 H_2O$ ) C, 67.94; H, 5.60; N, 5.66. Found: C, 68.00; H, 5.47; N, 5.64.

**3-(1-(4-Fluorophenyl)-5-(3'-methoxyphenyl)-1,3-dihydroisobenzofuran-1-yl)-N,N-dimethylpropan-1-amine (11).** Anal. Calcd. For oxalate salt ( $C_{26}H_{28}FNO_2 \cdot C_2H_2O_4 \cdot 1/2 H_2O$ ) C, 66.66; H, 5.79; N, 2.78. Found: C, 66.70; H, 5.99; N, 2.77.

**3-(5-(3,4-Dichlorophenyl)-1-(4-fluorophenyl)-1,3-dihydroisobenzofuran-1-yl)-N,N-dimethylpropan-1-amine (12).** Anal. Calcd. For oxalate salt ( $C_{25}H_{24}Cl_2FNO \cdot C_2H_2O_4$ ) C, 60.68; H, 4.90; N, 2.62. Found: C, 60.57; H, 4.90; N, 2.62.

**3-(5-(3,5-Difluorophenyl)-1-(4-fluorophenyl)-1,3-dihydroisobenzofuran-1-yl)-N,N-dimethylpropan-1-amine oxalate (13).** Anal. Calcd. For oxalate salt ( $C_{25}H_{24}F_3NO \cdot C_2H_2O_4 \cdot 1/4 H_2O$ ) C, 64.09; H, 5.28; N, 2.77. Found: C, 64.00; H, 5.22; N, 2.73.

**3-(1-(4-Fluorophenyl)-5-phenethyl-1,3-dihydroisobenzofuran-1-yl)-N,N-dimethylpropan-1-amine (14).** Anal. Calcd. For oxalate salt ( $C_{27}H_{30}FNO \cdot C_2H_2O_4 \cdot 1/3 H_2O$ ) C, 69.72; H, 6.59; N, 2.80. Found: C, 69.73; H, 6.50; N, 2.79.

**3-(5-(3-Fluorophenyl)-1-(4-fluorophenyl)-1,3-dihydroisobenzofuran-1-yl)-N,N-dimethylpropan-1-amine (15).** Anal. Calcd. For oxalate salt ( $C_{25}H_{25}F_2NO \cdot C_2H_2O_4 \cdot 1/4 H_2O$ ) C, 66.45; H, 5.68; N, 2.87. Found: C, 66.53; H, 5.57; N, 2.88.

**3-(5-(3-Chlorophenyl)-1-(4-fluorophenyl)-1,3-dihydroisobenzofuran-1-yl)-N,N-dimethylpropan-1-amine (16).** Anal. Calcd. For oxalate salt ( $C_{25}H_{25}ClFNO \cdot C_2H_2O_4 \cdot 1/4 H_2O$ ) C, 64.29; H, 5.49; N, 2.78. Found: C, 64.25; H, 5.39; N, 2.70.

**(E)-3-(5-(4-Chlorostyryl)-1-(4-fluorophenyl)-1,3-dihydroisobenzofuran-1-yl)-N,N-dimethylpropan-1-amine (17).** Anal. Calcd. For oxalate salt ( $C_{27}H_{27}ClFNO \cdot C_2H_2O_4 \cdot 1/3 H_2O$ ) C, 65.47; H, 5.62; N, 2.66. Found: C, 65.62; H, 5.58; N, 2.66.

**3-(1-(4-Fluorophenyl)-4-phenyl-1,3-dihydroisobenzofuran-1-yl)-N,N-dimethylpropan-1-amine (18).** Anal. Calcd. For oxalate salt ( $C_{25}H_{26}FNO \cdot C_2H_2O_4 \cdot 1/4 H_2O$ ) C, 69.0; H, 6.11; N, 2.98. Found: C, 69.01; H, 6.05; N, 2.89.

**(E)-3-(1-(4-Fluorophenyl)-4-styryl-1,3-dihydroisobenzofuran-1-yl)-N,N-dimethylpropan-1-amine (19).** Anal. Calcd. For oxalate salt ( $C_{27}H_{28}FNO \cdot C_2H_2O_4 \cdot 1/4 H_2O$ ) C, 70.22; H, 6.20; N, 2.82. Found: C, 70.13; H, 6.03; N, 2.81.

**3-(5-(3-Fluorophenyl)-1-(4-fluorophenyl)-1,3-dihydroisobenzofuran-1-yl)-N,N-dimethylpropan-1-amine (20).** Anal. Calcd. For oxalate salt ( $C_{25}H_{25}F_2NO \cdot C_2H_2O_4$ ) C, 67.07; H, 5.63; N, 2.90. Found: C, 66.87; H, 5.71; N, 2.80.

**3-(1-(4-Fluorophenyl)-5-iodo-1,3-dihydroisobenzofuran-1-yl)-N,N-dimethylpropan-1-amine (21).** Anal. Calcd. For oxalate salt ( $C_{19}H_{21}FINO \cdot C_2H_2O_4$ ) C, 48.95; H, 4.50; N, 2.72. Found: C, 48.99; H, 4.28; N, 2.77.