Serotonin Transporter

5-HT; SERT; SLC6A4

Serotonin Transporters (SERTs) are integral membrane proteins that transport serotonin from synaptic spaces into presynaptic neurons. SERTs function by reuptaking serotonin in the synaptic cleft, effectively terminating the function of serotonin and halting neuronal transmission. Serotonin reuptake is a critical process to prevent overstimulation of nerves.

Serotonin transporter (SERT) regulates extracellular levels of serotonin (5-hydroxytryptamine, 5HT) in the brain by transporting 5HT into neurons and glial cells. The human SERT (hSERT) is the primary target for drugs used in the treatment of emotional disorders, including depression. hSERT belongs to the solute carrier 6 family that includes a bacterial leucine transporter (LeuT), for which a high resolution crystal structure has become available.
### Serotonin Transporter Inhibitors & Modulators

#### Amitifadine hydrochloride
(DOV-21947 hydrochloride; EB-1010 hydrochloride)  
**Cat. No.: HY-18332A**

**Bioactivity:** Amitifadine hydrochloride is a serotonin-norepinephrine-dopamine reuptake inhibitor (SNDRI), with $IC_{50}$ of 12, 23, 96 nM for serotonin, norepinephrine and dopamine in HEK 293 cells, respectively.

**Purity:** 99.92%

**Clinical Data:** Phase 3

**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

#### Azaphen dihydrochloride monohydrate
(Azafen dihydrochloride monohydrate; Pipofezin dihydrochloride monohydrate; ...)  
**Cat. No.: HY-A0022A**

**Bioactivity:** Pipofezine (Azafen or Azaphen) is a potent inhibitor of the reuptake of serotonin.

**Purity:** 99.60%

**Clinical Data:** No Development Reported

**Size:** 100 mg, 500 mg

#### Centanafadine hydrochloride
(EB-1020 hydrochloride)  
**Cat. No.: HY-16736A**

**Bioactivity:** Centanafadine (hydrochloride) is dual norepinephrine (NE)/dopamine (DA) transporter inhibitor, also inhibits serotonin transporter, with $IC_{50}$ of 6 nM, 38 nM and 83 nM for human NE, DA and serotonin transporter, respectively.

**Purity:** >98%

**Clinical Data:** No Development Reported

**Size:** 250 mg, 500 mg

#### Cinchonidine
(α-Quinidine)  
**Cat. No.: HY-N0173**

**Bioactivity:** Cinchonidine (α-Quinidine) is a cinchona alkaloid found in Cinchona officinalis and Gongronema latifolium. A building block used in asymmetric synthesis in organic chemistry. Weak inhibitor of $SERT$ with $K_i$ of 4.2, 36, 196, 15 μM for dSERT, hSERT, hSERT I172M, hSERT...

**Purity:** 98.0%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 100 mg

#### Citalopram hydrobromide
(±-Citalopram hydrobromide; Lu 10-171)  
**Cat. No.: HY-81287**

**Bioactivity:** Citalopram hydrobromide is an antidepressant drug of the selective serotonin reuptake inhibitor (SSRI) class. It has US FDA approval to treat major depression.

**Purity:** 99.0%

**Clinical Data:** Launched

**Size:** 10mM x 1mL in DMSO, 10 mg, 50 mg, 100 mg

#### Clomipramine D3
Cat. No.: HY-80457AS

**Bioactivity:** Clomipramine D3 is the deuterium labeled Clomipramine, which is a highly selective inhibitor of serotonin reuptake.

**Purity:** >98%

**Clinical Data:** No Development Reported

**Size:** 1 mg, 5 mg, 10 mg

#### Clomipramine hydrochloride
Cat. No.: HY-80457

**Bioactivity:** Clomipramine HCl is a serotonin transporter (SERT), norepinephrine transporter (NET) dopamine transporter (DAT) blocker with $K_i$ of 0.14, 54 and 3 nM, respectively. Target: 5-HT Receptor Clomipramine hydrochloride (Anafranil) is a hydrochloride salt of clomipramine which is a serotonin...

**Purity:** 99.72%

**Clinical Data:** Launched

**Size:** 10mM x 1mL in DMSO, 100 mg, 500 mg

#### Dapoxetine hydrochloride
(LY-210448 hydrochloride)  
**Cat. No.: HY-80304A**

**Bioactivity:** Dapoxetine HCl is a short-acting novel selective serotonin reuptake inhibitor (SSRI).

**Purity:** 99.85%

**Clinical Data:** Launched

**Size:** 10mM x 1mL in DMSO, 50 mg, 100 mg
Dasotraline (SEP 225289)  
Cat. No.: HY-12850

Bioactivity: Dasotraline is a triple reuptake inhibitor that blocks dopamine, norepinephrine, and serotonin transporters with IC50 values of 4, 6, and 11 nM, respectively.

Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg, 10 mg, 25 mg, 50 mg

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Dasotraline hydrochloride (SEP-225289 hydrochloride)  
Cat. No.: HY-12850A

Bioactivity: Dasotraline hydrochloride (SEP-225289 hydrochloride) is a triple reuptake inhibitor that blocks dopamine, norepinephrine, and serotonin transporters with IC50 values of 4, 6, and 11 nM, respectively.

Purity: 99.60%
Clinical Data: Phase 3
Size: 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 25 mg, 50 mg

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Desvenlafaxine (O-Desmethylvenlafaxine)  
Cat. No.: HY-80602

Bioactivity: Desvenlafaxine is a serotonin (5-HT) and norepinephrine (NE) reuptake inhibitor with Ki of 40.2 nM and 558.4 nM, respectively.

Purity: 98.0%
Clinical Data: Launched
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg

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Desvenlafaxine succinate hydrate (O-Desmethylvenlafaxine succinate hydrate)  
Cat. No.: HY-80602A

Bioactivity: Desvenlafaxine succinate hydrate is an antidepressant of the serotonin-norepinephrine reuptake inhibitor (SNRI).

Purity: 99.76%
Clinical Data: Launched
Size: 10mM x 1mL in DMSO, 10 mg, 50 mg

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Dopamine serotonin antagonist-1  
Cat. No.: HY-42110

Bioactivity: Dopamine serotonin antagonist-1 is a dual dopamine and serotonin receptor antagonist with Ks of 200, 2500, 420, 39, 84, 40 nM for dopamine D1, D2, D4, and serotonin 52A, 52C, S3, respectively.

Purity: 99.79%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 10 mg, 50 mg, 100 mg

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DOV-216,303 Free Base  
Cat. No.: HY-18332C

Bioactivity: DOV-216,303 (Free Base) is a potent triple serotonin, norepinephrine, and dopamine reuptake inhibitor, with IC50 values of 14 nM, 20 nM and 78 nM for H5ERT, HNET and hDAT, respectively. Has antidepressant-like effects ...

Purity: 98.47%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 25 mg, 50 mg

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Doxepin Hydrochloride  
Cat. No.: HY-80725

Bioactivity: Doxepin HCl is a tricyclic antidepressant that is marketed worldwide.

Purity: 99.41%
Clinical Data: Launched
Size: 10mM x 1mL in DMSO, 1 g, 5 g, 10 g

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DSP-1053  
Cat. No.: HY-111419

Bioactivity: DSP-1053 is a potent Serotonin Transporter (SERT) (Ks = 1.02 nM) inhibitor with partial 5-HT1A receptor (Ks = 5.05 nM) agonistic activity.

Purity: >98%
Clinical Data: No Development Reported
Size: 500 mg, 100 mg, 250 mg

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Duloxetine ((S)-Duloxetine; LY248686)  
Cat. No.: HY-80161

Bioactivity: Duloxetine is a serotonin-norepinephrine reuptake inhibitor with Ki of 4.6 nM, used for treatment of major depressive disorder and generalized anxiety disorder (GAD).

Purity: >98%
Clinical Data: Launched
Size: 10 mg, 50 mg

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Duloxetine hydrochloride ((S)-Duloxetine hydrochloride; LY-248686 hydrochloride)  
Cat. No.: HY-80161A

Bioactivity: Duloxetine hydrochloride is a serotonin-norepinephrine reuptake inhibitor (SNRI) with Ki of 4.6 nM, used for treatment of major depressive disorder and generalized anxiety disorder (GAD).

Purity: 99.92%
Clinical Data: Launched
Size: 10mM x 1mL in DMSO, 10 mg, 50 mg, 100 mg

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Bioactivity:
Eplivanserin mixture is a selective serotonin reuptake inhibitor and a 5-HT<sub>2A</sub> receptor antagonist, extracted from patent WO 2005/002578 A1. [1]  

Purity: 99.95%  
Clinical Data: No Development Reported  
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

Bioactivity:
Escitalopram is a selective serotonin reuptake inhibitor (SSRI) with Ki of 0.89 nM. Target: SSRIs. Escitalopram, the S-enantiomer of citalopram, belongs to a class of antidepressant agents known as selective serotonin-reuptake inhibitors (SSRIs). Escitalopram may be used to treat major...

Purity: >98%  
Clinical Data: Launched  
Size: 10 mg, 50 mg, 100 mg

Bioactivity:
Escitalopram oxalate is a selective serotonin reuptake inhibitor (SSRI) with Ki of 0.89 nM.

Purity: 98.0%  
Clinical Data: Launched  
Size: 10mM x 1mL in Water, 10 mg, 50 mg, 100 mg

Bioactivity:
Fluoxetine hydrochloride is an antidepressant and a selective serotonin reuptake inhibitor.

Purity: 99.86%  
Clinical Data: Launched  
Size: 10mM x 1mL in DMSO, 50 mg, 100 mg, 500 mg

Bioactivity:
Fluoxetine (LY-110140 free base) is a selective serotonin reuptake inhibitor (SSRI) class used for antidepressant research.

Purity: >98%  
Clinical Data: Launched  
Size: 50 mg, 100 mg, 500 mg

Bioactivity:
Fluoxetine maleate (DU-23000) is an antidepressant which functions pharmacologically as a selective serotonin reuptake inhibitor.

Purity: >98%  
Clinical Data: Launched  
Size: 10 mg, 50 mg, 100 mg

Bioactivity:
Fluvoxamine maleate (DU-23000 maleate) is an antidepressant which functions pharmacologically as a selective serotonin reuptake inhibitor.

Purity: 99.85%  
Clinical Data: Launched  
Size: 10mM x 1mL in DMSO, 10 mg, 50 mg, 100 mg

Bioactivity:
Imipramine hydrochloride inhibits serotonin transporter with an IC<sub>50</sub> value of 32 nM in vitro.

Purity: 99.89%  
Clinical Data: Launched  
Size: 10mM x 1mL in Water, 100 mg

Bioactivity:
Milnacipran is a serotonin-norepinephrine reuptake inhibitor (SNRI) used in the clinical treatment of fibromyalgia.

Purity: >98%  
Clinical Data: Launched  
Size: 10 mg, 50 mg, 100 mg

Bioactivity:
Milnacipran (1S-cis) hydrochloride is a serotonin-norepinephrine reuptake inhibitor (SNRI), used in the clinical treatment of fibromyalgia.

Purity: 99.94%  
Clinical Data: Launched  
Size: 10mM x 1mL in Water, 5 mg, 10 mg, 50 mg
Milnacipran hydrochloride  
**Bioactivity:** Milnacipran hydrochloride is a serotonin-norepinephrine reuptake inhibitor (SNRI) used in the clinical treatment of fibromyalgia.  
**Purity:** 99.40%  
**Clinical Data:** Launched  
**Size:** 10 mM x 1 mL in DMSO, 10 mg, 50 mg, 100 mg

Nitroxazepine  
**(CIBA 2330Go)**  
**Bioactivity:** Nitroxazepine is a tricyclic antidepressant (TCA) for the treatment of depression. Nitroxazepine acts as a serotonin-norepinephrine reuptake inhibitor.  
**Purity:** >98%  
**Clinical Data:** No Development Reported  
**Size:** 1 mg, 5 mg, 10 mg, 20 mg

Paroxetine hydrochloride  
**(BRL29060 hydrochloride; BRL29060A)**  
**Bioactivity:** Paroxetine hydrochloride is a potent selective serotonin-reuptake inhibitor, commonly prescribed as an antidepressant and has GRK2 inhibitory ability with $IC_{50}$ of 14 μM.  
**Purity:** 99.0%  
**Clinical Data:** Launched  
**Size:** 10 mM x 1 mL in DMSO, 100 mg, 500 mg

Paroxetine hydrochloride hemihydrate  
**(BRL29060 hydrochloride hemihydrate; BRL29060A hemihydrate)**  
**Bioactivity:** Paroxetine hydrochloride hemihydrate is a potent selective serotonin-reuptake inhibitor, commonly prescribed as an antidepressant and has GRK2 inhibitory ability with $IC_{50}$ of 14 μM.  
**Purity:** >98%  
**Clinical Data:** Launched  
**Size:** 100 mg, 500 mg

Sertraline hydrochloride  
**Bioactivity:** Sertraline hydrochloride is an antidepressant of the selective serotonin reuptake inhibitor (SSRI) class.  
**Purity:** 99.90%  
**Clinical Data:** Launched  
**Size:** 10 mM x 1 mL in DMSO, 5 mg, 10 mg, 50 mg

Venlafaxine  
**(Wy 45030)**  
**Bioactivity:** Venlafaxine is an antidepressant of the serotonin-norepinephrine reuptake inhibitor (SNRI) class.  
**Purity:** >98%  
**Clinical Data:** Launched  
**Size:** 10 mg, 50 mg

Venlafaxine hydrochloride  
**(Wy 45030 hydrochloride)**  
**Bioactivity:** Venlafaxine hydrochloride is an antidepressant of the serotonin-norepinephrine reuptake inhibitor (SNRI) class.  
**Purity:** 99.87%  
**Clinical Data:** Launched  
**Size:** 10 mM x 1 mL in Water, 10 mg, 50 mg

Vilazodone  
**(EMD 68843; SB659746A)**  
**Bioactivity:** Vilazodone (EMD 68843; SB659746A) is a combined serotonin specific reuptake inhibitor (SSRI) and 5-HT1A receptor partial agonist currently under clinical evaluation for the treatment of major depression.  
**Purity:** 99.91%  
**Clinical Data:** Launched  
**Size:** 10 mM x 1 mL in DMSO, 10 mg, 50 mg

Vilazodone D8  
**Bioactivity:** Vilazodone D8 is the a deuterium labeled vilazodone, which is a combined serotonin specific reuptake inhibitor (SSRI) and 5-HT1A receptor partial agonist.  
**Purity:** >98%  
**Clinical Data:** No Development Reported  
**Size:** 1 mg, 5 mg

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Vilazodone Hydrochloride  
(EMD 68843 (Hydrochloride); SB659746A (Hydrochloride))  
**Cat. No.: HY-14261**

**Bioactivity:** Vilazodone Hydrochloride (EMD 68843 Hydrochloride; SB659746A Hydrochloride) is a serotonin transporter (SER) inhibitor and 5-HT\textsubscript{1A} receptor partial agonist.

**Purity:** 99.94%  
**Clinical Data:** Launched  
**Size:** 10mM x 1mL in DMSO, 10 mg, 50 mg

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Vortioxetine  
(Lu AA 21004)  
**Cat. No.: HY-15414**

**Bioactivity:** Vortioxetine is a inhibitor of 5-HT\textsubscript{1A}, 5-HT\textsubscript{1B}, 5-HT\textsubscript{3A}, 5-HT\textsubscript{7} receptor and SERT, with $K_i$ values of 15 nM, 33 nM, 3.7 nM, 19 nM and 1.6 nM, respectively.

**Purity:** 98.81%  
**Clinical Data:** Launched  
**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

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Vortioxetine hydrobromide  
(Lu AA21004 hydrobromide)  
**Cat. No.: HY-15414A**

**Bioactivity:** Vortioxetine hydrobromide is a multimodal serotonergic agent, inhibits 5-HT\textsubscript{1A}, 5-HT\textsubscript{1B}, 5-HT\textsubscript{3A}, 5-HT\textsubscript{7} receptor and SERT with $K_i$ values of 15 nM, 33 nM, 3.7 nM, 19 nM and 1.6 nM, respectively.

**Purity:** 99.54%  
**Clinical Data:** Launched  
**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

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WF-516  
**Cat. No.: HY-19417A**

**Bioactivity:** WF-516 is an inhibitor of 5-HT reuptake, and an antagonist of 5-HT\textsubscript{1A} and 5-HT\textsubscript{2A} receptors, with $K_i$ of 5 nM and 40 nM for 5-HT1A receptor and 5-HT2A receptor in humans, respectively, and has potent antidepressant activity.

**Purity:** >98%  
**Clinical Data:** No Development Reported  
**Size:** 1 mg, 5 mg, 10 mg, 20 mg

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Tel: 609-228-6898  Fax: 609-228-5909  Email: sales@MedChemExpress.com