# Small Molecules

**Fluoxetine**

Serotonin reuptake inhibitor

Catalog # 73142 100 mg
73144 500 mg

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TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713
INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM
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## Product Description

Fluoxetine is a selective serotonin reuptake inhibitor, displaying a distinct preference for the serotonin transporter (Kd = 0.81 nM) over both the norepinephrine and dopamine transporters (Kd values of 240 and 3600 nM, respectively; Tatsumi et al.). This product is supplied as the hydrochloride salt of the molecule.

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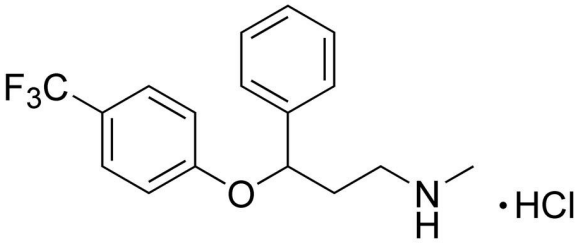
| Molecular Name: | Fluoxetine (Hydrochloride) |
| Alternative Names: | LY110140 |
| CAS Number: | 56296-78-7 |
| Chemical Formula: | $C_{17}H_{18}F_3NO \cdot HCl$ |
| Molecular Weight: | 345.8 g/mol |
| Purity: | ≥ 98% |
| Chemical Name: | methyl[3-phenyl-3-[4-(trifluoromethyl)phenoxy]propyl]ammonium chloride |
| Structure: |  |



## Properties

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| Physical Appearance: | A crystalline solid |
| Storage: | Product stable at -20°C as supplied. Protect from prolonged exposure to light.<br>Stable as supplied for 12 months from date of receipt. |
| Solubility: | · DMSO ≤ 35 mM<br>· Absolute ethanol ≤ 35 mM<br>· PBS (pH 7.2) ≤ 0.6 mM<br>For example, to prepare a 10 mM stock solution in DMSO, resuspend 100 mg in 28.9 mL of DMSO.<br><br>Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.<br><br>For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity. |

## Published Applications

MAINTENANCE AND SELF-RENEWAL
· Induces proliferation and inhibits differentiation of human hypothalamic neuroprogenitor cells (Sousa-Ferreira et al.).
· Stimulates proliferation of mouse fetal neural stem cells (Chang et al. 2012).
· Stimulates in vivo proliferation of amplifying neural progenitor cells in adult mouse brain (Encinas et al.).
DIFFERENTIATION
· Induces proliferation of human embryonic stem cell-derived neural precursors, and enhances their neuronal differentiation (Chang et al. 2010).

## References

Chang E-A et al. (2010) Increased cellular turnover in response to fluoxetine in neuronal precursors derived from human embryonic stem cells. Int J Dev Biol 54(4): 707–15.
Chang K-A et al. (2012) Therapeutic potentials of neural stem cells treated with fluoxetine in Alzheimer's disease. Neurochem Int 61(6): 885–91.
Encinas et al. (2006) Fluoxetine targets early progenitor cells in the adult brain. Proc Natl Acad Sci USA 103(21): 8233-8.
Sousa-Ferreira L et al. (2014) Fluoxetine induces proliferation and inhibits differentiation of hypothalamic neuroprogenitor cells in vitro. PLoS One 9(3): e88917.
Tatsumi M et al. (1997) Pharmacological profile of antidepressants and related compounds at human monoamine transporters. Eur J Pharmacol 340(2-3): 249–58.

## Related Small Molecules

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This product is hazardous. Please refer to the Safety Data Sheet (SDS).