

## Small Molecules

### Fluoxetine

Serotonin reuptake inhibitor

Catalog # 73142  
73144

100 mg  
500 mg



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TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713

INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM

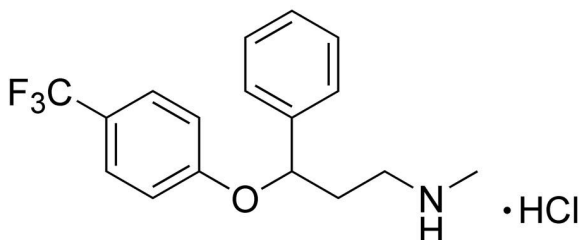
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## Product Description

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

Molecular Name:	Fluoxetine (Hydrochloride)
Alternative Names:	Fontex™, LY110140, Prozac™, Sarafem™
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

Physical Appearance:	A crystalline solid
Storage:	Product stable at $-20^\circ C$ as supplied. Protect from prolonged exposure to light. For product expiry date, please contact techsupport@stemcell.com.
Solubility:	<ul style="list-style-type: none"><li>· DMSO <math>\leq 35</math> mM</li><li>· Absolute ethanol <math>\leq 35</math> mM</li><li>· PBS (pH 7.2) <math>\leq 0.6</math> mM</li></ul> For example, to prepare a 10 mM stock solution in DMSO, resuspend 100 mg in 28.9 mL of DMSO.

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  $-20^\circ C$ . 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.

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

### DIFFERENTIATION

- Induces proliferation of human embryonic stem cell-derived neural precursors, and enhances their neuronal differentiation (Chang et al. 2010).

### MAINTENANCE

- 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.).

## 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 U S A* 103(21): 8233-8238.
- 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): 249–258.

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