Small Molecules

EC23

Retinoid pathway activator; Activates retinoic acid receptor (RAR)

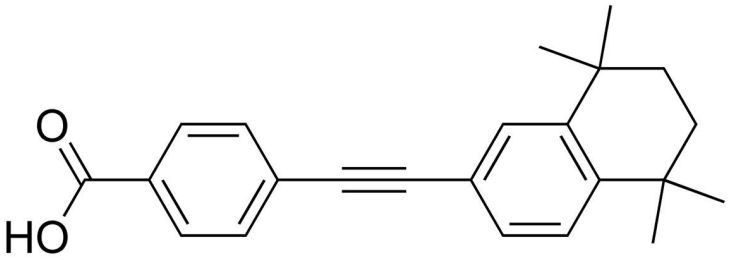
Catalog #	73102	1 mg
	73104	10 mg

STEMCELL™ TECHNOLOGIES
Scientists Helping Scientists™ | WWW.STEMCELL.COM
TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713
INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM
FOR GLOBAL CONTACT DETAILS VISIT OUR WEBSITE

Product Description

EC23 is a retinoic acid receptor (RAR) agonist with pan-RAR activity (EC_{50}: RARα 41 nM, RARβ 0.5 nM, RARγ 0.4 nM), while having no appreciable activity for retinoid X receptors (RXR; EC_{50} > 10 µM for all; Gambone et al.). It is a photostable synthetic analog of All-Trans Retinoic Acid (Catalog #72262) (ATRA; Christie et al. 2008). EC23 also weakly activates aryl hydrocarbon receptors (Gambone et al.).

Molecular Name:	EC23
Alternative Names:	AGN 190205; BASF 46928
CAS Number:	104561-41-3
Chemical Formula:	$C_{23}H_{24}O_2$
Molecular Weight:	332.4 g/mol
Purity:	≥ 98%
Chemical Name:	4-[2-(5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-2-naphthalenyl)ethynyl]-benzoic acid
Structure:	



Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect from prolonged exposure to light. Stable as supplied for 12 months from date of receipt.
Solubility:	· DMSO ≤ 15 mM · Absolute ethanol ≤ 3 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 301 µL 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°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. Compound has low solubility in aqueous media. 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 neural differentiation of human pluripotent stem cells, similarly to ATRA (Christie et al. 2010; Clemens et al.).
· Induces neuronal differentiation of human fetal neural progenitor cell line ReNcell 197VM (Christie et al. 2010).

References

Christie VB et al. (2010) Retinoid supplementation of differentiating human neural progenitors and embryonic stem cells leads to enhanced neurogenesis in vitro. J Neurosci Methods 193(2): 239–45.
Christie VB et al. (2008) Synthesis and evaluation of synthetic retinoid derivatives as inducers of stem cell differentiation. Org Biomol Chem 6(19): 3497.
Clemens G et al. (2013) The action of all-trans-retinoic acid (ATRA) and synthetic retinoid analogues (EC19 and EC23) on human pluripotent stem cells differentiation investigated using single cell infrared microspectroscopy. Mol Biosyst 9(4): 677–92.
Gambone CJ et al. (2002) Unique property of some synthetic retinoids: activation of the aryl hydrocarbon receptor pathway. Mol Pharmacol 61(2): 334–42.

Related Small Molecules

For a complete list of small molecules available from STEMCELL Technologies, visit www.stemcell.com/smallmolecules or contact us at techsupport@stemcell.com.