Small Molecules

9-cis Retinoic Acid

Retinoid pathway activator; Activates retinoic acid receptor (RAR) and retinoid X receptor (RXR)

Catalog #	72382	5 mg
	72384	25 mg

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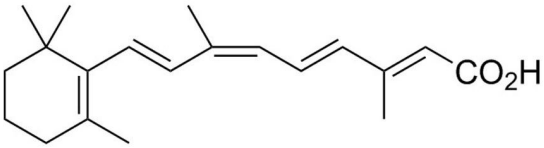
Product Description

9-cis-Retinoic Acid is a natural metabolite of vitamin A, derived from the intermediate All-Trans Retinoic Acid (Catalog #72262) (Kane). It potently activates all isoforms of retinoic acid receptor (RAR; Ki = 0.5 - 27 nM) as well as retinoid X receptor (RXR; Ki = 3.8 - 12 nM) isoforms (Umemiya et al.; Wong et al.). RAR heterodimerizes with RXR, while RXR can homodimerize as well as heterodimerize with numerous partners in addition to RAR, thus allowing 9-cis-Retinoic Acid to evoke a wide range of effects (Dawson et al.; Kane).

Molecular Name:	9-cis Retinoic Acid
Alternative Names:	9-cis-retinoic acid; Aliretinoin; NSC 659772; Panretin
CAS Number:	5300-03-8
Chemical Formula:	$C_{20}H_{28}O_2$
Molecular Weight:	300.4 g/mol
Purity:	≥ 95%
Chemical Name:	(2E,4E,6Z,8E)-3,7-dimethyl-9-(2,6,6-trimethylcyclohexen-1-yl)nona-2,4,6,8-tetraenoic 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:	· Absolute ethanol ≤ 1.6 mM · DMSO ≤ 65 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 333 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
· Increases the number of neurons derived from rat neural stem cell cultures (Laeng et al.).
· Promotes oligodendrocyte precursor cell differentiation and myelination in cultured cells and mouse cerebellar slices (Huang et al.).
· Induces formation of pancreatic ducts, but not acini, in embryonic mouse pancreas grown in collagen gel (Kadison et al.; Kobayashi et al.).
· Enhances BMP9-induced osteogenic differentiation of mesenchymal progenitor cells, in vitro and in vivo (Zhang et al.).
· Induces myogenic differentiation of C2C12 myoblast progenitor cells (Zhu et al.).
CANCER RESEARCH
· Inhibits proliferation of Epstein-Barr virus-infected lymphoblastoid cell lines (Pomponi et al.).
· Inhibits growth of cultured human gastric cancer cells (Naka et al.).
· Inhibits spontaneous proliferation and CD40-induced growth in primary mantle cell lymphoma cells (Guidoboni et al.).

References

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