Retinoic Acid

Catalog Number  SM-0007-0500
Synonyms  Retinoic acid (AT), Retinoic acid (All-trans), All-trans retinoic acid (ATRA), NSC 122758, Trans retinoic acid, Tretinoin, Vitamin A acid, RA
Size  500 mg
Description  Retinoic Acid (all-trans) is a metabolite of vitamin A that acts as a ligand for nuclear retinoic acid receptors (RARs, specifically RARα/β/γ) with an IC₅₀ of 14nM and has a major effect on the differentiation and patterning of stem cells, and therefore in the development process (Rhinn & Dolle). In the process of differentiating mouse embryonic stem cells (ESCs), Retinoic Acid has been shown to promote the growth of glial cells and functional neurons in culture (Fraichard, et al.). Furthermore, Retinoic Acid has played an important role in protocols involving the differentiation of human pluripotent stem cells (PSCs) into functional pancreatic β cells when combined with CHIR99021 (Cat. No. SM-0001-0010), SANT-1 (Cat. No. SM-0008-0010), Y27632 (Cat. No. SM-0013-0010), Compound E (Cat. No. SM-0002-0010), RepSox (Cat. No. SM-0006-0010), Triiodothyronine Salt (Cat. No. SM-0011-0500), and other growth factors (Pagliuca, et al.).

Molecular Weight  300.44
Molecular Formula  C₂₀H₂₈O₂
Chemical Name  (all-E)-3,7-Dimethyl-9-(2,6,6-trimethyl-1-cyclohexen-1-yl)-2,4,6,8-nonatetraenoic acid
CAS Number  302-79-4
Target  RAR/RXR; PPAR; Endogenous Metabolite
Appearance  Light yellow to yellow (Solid)
Purity  ≥ 95% by LCMS
Solubility and Reconstitution  Soluble in DMSO up to 25 mM and Ethanol up to 2 mM, for example:
  500 mg/1664.2 mL = 0.300 mg/mL = 1 mM
  500 mg/832.113 mL = 0.601 mg/mL = 2 mM
  500 mg/166.423 mL = 3.004 mg/mL = 10 mM
  500 mg/83.211 mL = 6.009 mg/mL = 20 mM
Storage and Stability  Store at -20°C and protect from light

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References

