



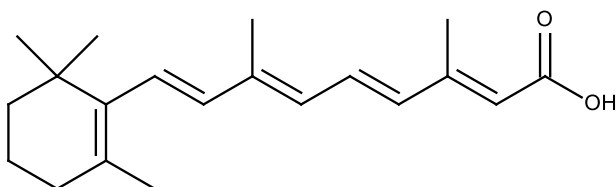
### Catalog # 10-1138

#### Retinoic acid

CAS# 302-79-4

3,7-Dimethyl-9-(2,6,6-trimethyl-1-cyclohexen-1-yl)-2E,4E,6E,8E,-nonatetraenoic acid; ATRA

Lot # X101505



*all-trans*-Retinoic acid (ATRA; a metabolite of Vitamin A) is an endogenous ligand for the retinoic acid receptor (RAR). The binding of retinoic acid to the RAR and retinoid X (RXR) heterodimer causes conformation changes in RAR that affects the binding of other proteins that regulate the growth and differentiation of a variety of both normal and malignant cells.<sup>1</sup> ATRA promotes differentiation of embryonic stem cells (ESCs) into a variety of cell types *in vitro*.<sup>2-4</sup>

- 1) Allenby, (1993), *Retinoic acid receptors and retinoid X receptors: interactions with endogenous retinoic acid*. Proc Natl Acad Sci USA **90** 30
- 2) Dani *et al* (1997) Differentiation of embryonic stem cells into adipocytes in vitro. J. Cell Sci. **110** 1279
- 3) Hu,, (2009) *Differentiation Of Spinal Motor Neurons From Pluripotent Human Stem Cells*. Nat. Protoc. **4**, 1295
- 4) Sasai. (2002), *Generation of dopaminergic neurons from embryonic stem cells*. J. Neurol. **249**, II 41

#### PHYSICAL DATA

|                        |                                                                                                                                                                                                        |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Molecular Weight:      | 300.44                                                                                                                                                                                                 |
| Molecular Formula:     | C <sub>20</sub> H <sub>28</sub> O <sub>2</sub>                                                                                                                                                         |
| Purity:                | >98%                                                                                                                                                                                                   |
|                        | NMR: (Conforms)                                                                                                                                                                                        |
| Solubility:            | DMSO (up to 8 mg/ml); ethanol (up to 15 mg/ml)                                                                                                                                                         |
| Physical Description:  | Yellow solid                                                                                                                                                                                           |
| Storage and Stability: | Store as supplied at -20°C for up to 2 years from the date of purchase.<br>Protect from exposure to moisture and air. Solutions in degassed DMSO and ethanol may be stored at -20°C for up to 1 month. |

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