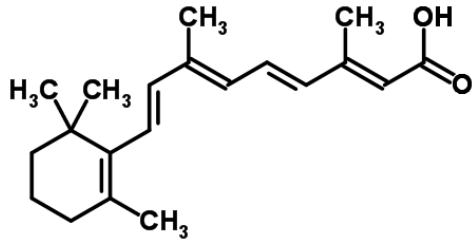




## Product Specification Sheet

<b>Product Name</b>	Stemolecule™ All-Trans Retinoic Acid
<b>Description</b>	Stemolecule All-Trans Retinoic Acid is the oxidized form of Vitamin A and functions as a signaling molecule for various developmental pathways that control differentiation and proliferation <sup>1,2</sup> . It acts by binding to heterodimers of the retinoic acid receptor (RAR) and the retinoid X receptor (RXR), which then bind to retinoic acid response elements (RAREs) in the regulatory regions activating gene transcription <sup>3</sup> . All-Trans Retinoic Acid has been implicated in specification of the embryonic anterior/posterior axis through Hox gene regulation <sup>4</sup> . It has been used in various differentiation protocols, including B-cells, T cells and neurons and applied clinically to treat cancer as a form of differentiation-induction therapy <sup>2,5-11</sup> .
<b>Catalog Number</b>	04-0021
<b>Size</b>	100 mg
<b>Alternate Name</b>	(2E,4E,6E,8E)-3,7-dimethyl-9-(2,6,6-trimethylcyclohexen-1-yl)nona-2,4,6,8-tetraenoic acid
<b>Chemical Formula</b>	C <sub>20</sub> H <sub>28</sub> O <sub>2</sub>
<b>Structure</b>	
<b>Molecular Weight</b>	300.44
<b>CAS Number</b>	302-79-4
<b>Purity</b>	Greater than 98% by HPLC analysis
<b>Formulation</b>	Yellow to light orange crystalline powder
<b>Solubility</b>	For a 10 mM concentrated stock solution of All-Trans Retinoic Acid, add 1.66 ml of DMSO to 5 mg of the compound. If a precipitate is observed, warm the solution to 37°C for 2 to 5 minutes. For cell culture, the media should be prewarmed prior to adding the reconstituted compound. Note: for most cells, the maximum tolerance to DMSO is less than 0.5%. This molecule is soluble in DMSO at 100 mM and 95% ethanol at 9 mM.
<b>Storage and Stability</b>	Store powder at 4°C protected from light. Following reconstitution, store aliquots at -20°C. Stock solutions are stable for 6 months when stored as directed.
<b>Quality Control</b>	The purity of All-Trans Retinoic Acid was determined by HPLC analysis. The accurate mass was determined by mass spectrometry. Cellular toxicity of All-Trans Retinoic Acid was tested on mouse embryonic stem cells.

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