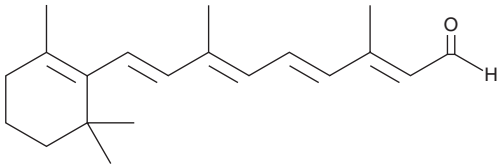
PRODUCT INFORMATION

all-*trans* Retinal

Item No. 18449

CAS Registry No.: 116-31-4
Formal Name: retinal
Synonyms: Retinaldehyde, Vitamin A aldehyde
MF: $C_{20}H_{28}O$
FW: 284.4
Purity: ≥98%
UV/Vis.: λ_{max}: 248, 380 nm
Supplied as: A crystalline solid
Storage: -80°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

all-*trans* Retinal is supplied as a crystalline solid. A stock solution may be made by dissolving the all-*trans* retinal in the solvent of choice, which should be purged with an inert gas. all-*trans* Retinal is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of all-*trans* retinal in ethanol and DMF is approximately 25 mg/ml and approximately 16 mg/ml in DMSO.

all-*trans* Retinal is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, all-*trans* retinal should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. all-*trans* Retinal has a solubility of approximately 0.3 mg/ml in a 1:2 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

all-*trans* Retinal is a natural retinoid that is derived from vitamin A. It is the oxidation product of all-*trans* retinol and associates with cellular retinol-binding protein-I (CRBP-I) and CRBP-II (K_ds = 50 and 90 nM, respectively), which are involved in the intracellular transport of retinol.[1] all-*trans* Retinal is also an intermediate of the phototransduction pathway of photoreceptors, including rhodopsin and bacterial opsins.[2] As a chemically reactive aldehyde, all-*trans* retinal can form toxic conjugates with proteins and lipids, leading to degeneration of the retina.[2]

References

1. Noy, N. Retinoid-binding proteins: Mediators of retinoid action. *Biochem. J.* **348**, 481-495 (2000).
2. Kiser, P.D., Golczak, M., Maeda, A., *et al.* Key enzymes of the retinoid (visual) cycle in vertebrate retina. *Biochim. Biophys. Acta.* **1821(1)**, 137-151 (2012).

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