

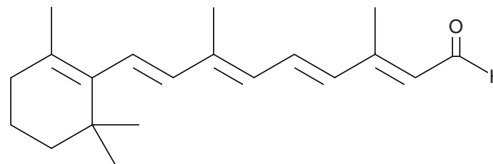
# PRODUCT INFORMATION



## 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:  $\geq 98\%$   
UV/Vis.:  $\lambda_{max}$ : 248, 380 nm  
Supplied as: A crystalline solid  
Storage:  $-80^{\circ}C$   
Stability:  $\geq 2$  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 ( $K_d$ s = 50 and 90 nM, respectively), which are involved in the intracellular transport of retinol.<sup>1</sup> all-trans Retinal is also an intermediate of the phototransduction pathway of photoreceptors, including rhodopsin and bacterial opsins.<sup>2</sup> As a chemically reactive aldehyde, all-trans retinal can form toxic conjugates with proteins and lipids, leading to degeneration of the retina.<sup>2</sup>

### 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).

#### WARNING

THIS PRODUCT IS FOR RESEARCH USE - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE. It is the responsibility of the purchaser to determine suitability for other applications.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897  
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM