

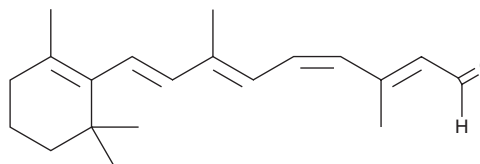
# PRODUCT INFORMATION



## 11-*cis* Retinal

Item No. 21377

**CAS Registry No.:** 564-87-4  
**Formal Name:** (2E,4Z,6E,8E)-3,7-dimethyl-9-(2,6,6-trimethylcyclohex-1-en-1-yl)nona-2,4,6,8-tetraenal  
**Synonyms:** 11-*cis* Retinaldehyde, 11-*cis* Vitamin A aldehyde  
**MF:** C<sub>20</sub>H<sub>28</sub>O  
**FW:** 284.4  
**Purity:** ≥65%  
**Supplied as:** An oil  
**Storage:** -80°C  
**Stability:** ≥2 years



**Special Conditions:** Light and temperature sensitive

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

### Laboratory Procedures

11-*cis* Retinal is supplied as a oil. A stock solution may be made by dissolving the 11-*cis* retinal in the solvent of choice, which should be purged with an inert gas. 11-*cis* Retinal is slightly soluble in chloroform and methanol.

### Description

11-*cis* Retinal is a chromophore that binds to opsin in the mammalian visual system as an inverse agonist forming the inactive conformation of rhodopsin.<sup>1</sup> When 11-*cis* retinal absorbs a photon of light, it isomerizes to form all-*trans* retinal (Item No. 18449) beginning the phototransduction cycle, which is the basis for mammalian vision. A G121L mutation in opsin allows 11-*cis* retinal to bind as a partial agonist and activate rhodopsin in the absence of light.<sup>2</sup> In a moth model of carotenoid deficiency-induced low visual sensitivity, 11-*cis* retinal application to compound eyes restored visual sensitivity almost completely.<sup>3</sup>

### References

1. Tradtrantip, L., Sonawane, N.D., Namkung, W., *et al.* Nanomolar potency pyrimido-pyrrolo-quinoxalinedione CFTR inhibitor reduces cyst size in a polycystic kidney disease model. *J. Med. Chem.* **52**(20), 6447-6455 (2009).
2. Han, M., Lou, J., Nakanishi, K., *et al.* Partial agonist activity of 11-*cis*-retinal in rhodopsin mutants. *J. Biol. Chem.* **272**(37), 23081-23085 (1997).
3. Bennett, R.R. and White, R.H. 11-*cis* retinal restores visual function in vitamin A-deficient *Manduca*. *Vis. Neurosci.* **6**(5), 473-479 (1991).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### 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

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 09/29/2022

#### 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