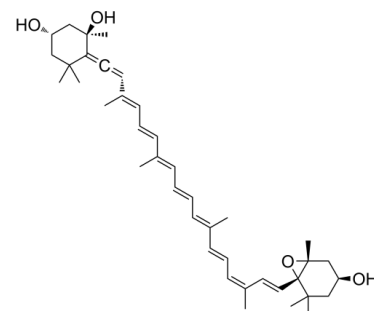


## Data Sheet

<b>Product Name:</b>	Neoxanthin
<b>Cat. No.:</b>	CS-0131634
<b>CAS No.:</b>	14660-91-4
<b>Molecular Formula:</b>	C <sub>40</sub> H <sub>56</sub> O <sub>4</sub>
<b>Molecular Weight:</b>	600.87
<b>Target:</b>	Apoptosis; DNA/RNA Synthesis
<b>Pathway:</b>	Apoptosis; Cell Cycle/DNA Damage
<b>Solubility:</b>	10 mM in DMSO



### BIOLOGICAL ACTIVITY:

Neoxanthin is a major xanthophyll carotenoid and a precursor of the plant hormone abscisic acid in dark green leafy vegetables. Neoxanthin is a potent antioxidant and light-harvesting pigment. Neoxanthin induces **apoptosis** and has anticancer actions<sup>[1][2]</sup>. *In Vitro*: Neoxanthin (20 μM; 72 h) treatment significantly reduces cell viability to 10.9% for PC-3 cells, 15.0% for DU 145 cells, and nearly zero for LNCaP cells, respectively<sup>[1]</sup>.

Neoxanthin strongly inhibits cell growth by suppressing DNA synthesis in C3H10T1/2 cells<sup>[1]</sup>.

In photosynthetic organisms, Neoxanthin is the essential component of both the photosystem I (PSI) and photosystem II (PSII) reaction centers of oxygenic photosynthetic apparatus<sup>[2]</sup>. *In Vivo*: The gastrointestinal metabolism of Neoxanthin in mice is investigated. Two hours after the oral administration of Neoxanthin (40 nmol/mouse), Neoxanthin is found in the plasma and livers of mice. The concentrations of Neoxanthin is 13.6-9.0 nM in plasma, and 7.3 3.6 pmol/g in liver, respectively. (R/S)-Neochrome is also found in the small intestinal contents of Neoxanthin-administered mice<sup>[3]</sup>.

### References:

- [1]. E Kotake-Nara, et al. Carotenoids Affect Proliferation of Human Prostate Cancer Cells. J Nutr. 2001 Dec;131(12):3303-6.
- [2]. Ramesh Kumar Saini, et al. An Efficient One-Step Scheme for the Purification of Major Xanthophyll Carotenoids From Lettuce, and Assessment of Their Comparative Anticancer Potential. Food Chem. 2018 Nov 15;266:56-65.
- [3]. Akira Asai, et al. An Epoxide-Furanoid Rearrangement of Spinach Neoxanthin Occurs in the Gastrointestinal Tract of Mice and in Vitro: Formation and Cytostatic Activity of Neochrome Stereoisomers. J Nutr. 2004 Sep;134(9):2237-43.

### CAIndexNames:

β,β-Carotene-3,3',5(6H)-triol, 6,7-didehydro-5',6'-epoxy-5',6'-dihydro-, (3S,3'S,5R,5'R,6R,6'S,9'-cis)-

### SMILES:

CC(/C=C/[C@](O1)(C(C)(C2)C)[C@]1(C[C@H]2O)C)=C/C=C/C(C)=C/C=C/C(C)/C=C/C(C)/C=[C@@]=C([C@](O)(C3)C)C(C)(C[C@H]3O)C

**Caution: Product has not been fully validated for medical applications. For research use only.**

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