

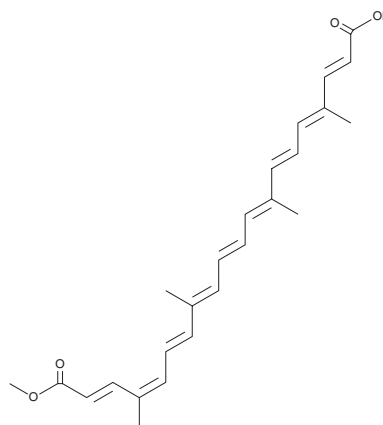
PRODUCT INFORMATION



Bixin

Item No. 37802

CAS Registry No.: 6983-79-5
Formal Name: 2E,4Z,8,13,17-tetramethyl-2,4,6E,8E,10E,12E,14E,16E,18E-eicosanonaenedioic acid, 1-methyl ester
Synonyms: α -Bixin, *cis*-Bixin
MF: C₂₅H₃₀O₄
FW: 394.5
Purity: ≥98%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Plant/*Bixa orellana*



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

Laboratory Procedures

Bixin is supplied as a solid. A stock solution may be made by dissolving the bixin in the solvent of choice, which should be purged with an inert gas. Bixin is soluble (≥10 mg/ml) in DMSO.

Description

Bixin is an apocarotenoid that has been found in *B. orellana* and has diverse biological activities.¹ It is the principal compound in the color additive annatto.² Bixin inhibits the proliferation of MCF-7 breast, HeLa cervical, and A549 lung cancer cells (IC₅₀s = 14.38, 43.87, and 259.38 μM, respectively). Bixin (10 mg/kg per day) increases glutathione (GSH) levels and reduces mercury-induced DNA damage in rat hepatocytes and leukocytes.³ It induces nuclear factor erythroid 2-related factor 2 (Nrf2) transcriptional activity in a reporter assay and increases levels of GSH and glutamate-cysteine ligase modifier subunit (GCLM).⁴ It reduces cutaneous photodamage from solar UV exposure in mice in a Nrf2-dependent manner when administered at a dose of 200 mg/kg.

References

1. Bouvier, F., Dogbo, O., and Camara, B. Biosynthesis of the food and cosmetic plant pigment bixin (annatto). *Science* **300**(5628), 2089-2091 (3003).
2. Kusmita, L., Franyoto, Y.D., Mutmainah, M., et al. Bixa orellana L. carotenoids: antiproliferative activity on human lung cancer, breast cancer, and cervical cancer cells *in vitro*. *Natural Product Research* **36**(24), 6421-6427 (2022).
3. Barcelos, G.R.M., Grotto, D., Serpeloni, J.M., et al. Bixin and norbixin protect against DNA-damage and alterations of redox status induced by methylmercury exposure in vivo. *Environ. Mol. Mutagen.* **53**(7), 535-541 (2012).
4. Tao, S., Park, S.L., de la Vega, M.R., et al. Systemic administration of the apocarotenoid bixin protects skin against solar UV-induced damage through activation of NRF2. *Free Rad. Biol. Med.* **89**, 690-700 (2015).

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.

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