BRING THIS TO YOUR DOCTOR · GREY PEPTIDES

Rubiscolin

Also called: Rubiscolin-6; Rubiscolin-5; YPLDLF

What it is

Rubiscolin is a delta-opioid peptide released from spinach Rubisco — rubiscolin-6 is Tyr-Pro-Leu-Asp-Leu-Phe (PMID 11741591). A food-derived 'exorphin' and the first bioactive peptide from plant Rubisco, it is unusually active by mouth in mice, where it produces delta-opioid-mediated analgesia, memory enhancement, anxiolytic and antidepressant-like effects and changes in appetite (PMIDs 12668220, 17766012). It is a food-derived research peptide, not an approved medicine, and has never been given to people as a treatment.

Approval status

Research Chemical. Not a drug: Drugs@FDA and the openFDA label endpoint hold no record, and FDA GSRS and ChEMBL hold no drug record for rubiscolin (searched November 7, 2026). It is a peptide released from spinach Rubisco, studied as a dietary bioactive and delta-opioid food 'exorphin'; there is no therapeutic development and no registered interventional trial of giving it to people.

Dosing, as printed in the page's Recommended Dosing box

No established human dose

Rubiscolin is a peptide released from a plant food protein; it has never been given to people as a treatment. The work is in mice, where synthetic peptide is given by injection or by mouth at experimental amounts that do not carry over to people.

Educational information, not medical advice. None is a recommendation for you. An unapproved compound has no established safe or effective human dose, and products sold for "research use only" are not made or tested for people. Talk to a doctor before acting on anything on this site, including before you start, stop or change any medicine or dose.

Key human evidence

No human study is carded on the page; its 6 study cards are reviews, animal or cell work. The first 2:

• **Discovery: rubiscolin, a delta-selective opioid peptide from spinach Rubisco** (In Vitro, 2001). Sequences in the spinach Rubisco large subunit matching the opioid-peptide pattern were synthesised and shown to have delta-selective opioid activity in mouse vas deferens and delta receptor-binding assays, and were named rubiscolin-5 (YPLDL) and rubiscolin-6 (YPLDLF); both had antinociceptive activity in mice after brain-ventricle or oral administration — the first bioactive peptide derived from plant Rubisco (a discovery study). **PMID 11741591**

• **Rubiscolin-6 enhances memory consolidation (mice)** (Animal, 2003). In a passive-avoidance test in mice, rubiscolin-6 enhanced memory consolidation after either brain-ventricle or oral administration, at amounts smaller than those needed for its analgesic effect; the memory enhancement was blocked by the delta-opioid antagonist naltrindole, indicating a delta-opioid-receptor mechanism (a preclinical result). **PMID 12668220**

Interactions

A PubMed search for interaction studies of this compound with any drug (November 7, 2026, 0 records) found none in people. That is not evidence that it is safe to combine with anything.

Side effects and cautions

Reported side effects	Contraindications and cautions
• No human adverse-event data exist: no published study has administered rubiscolin to people • In animals it is a delta-opioid agonist with behavioural effects (memory, anxiety, mood, appetite), so opioid-type actions are a mechanistic consideration — an inference, not human data for this peptide • Its orexigenic (appetite-increasing) effect in mice suggests effects on eating behaviour that would need study before any use (PMID 36111502) • Material sold online as 'rubiscolin' is an unregulated research chemical of unverified content	• Not a medicine: no FDA application or label, and no approval anywhere • No human dosing, interaction, pregnancy or long-term safety data exist for administered rubiscolin • It is a food-derived research peptide, not a treatment • Its delta-opioid activity and effects on mood and appetite warrant caution about central effects in any use

Five questions to ask

1. Rubiscolin is listed here as "Research Chemical". What does the evidence on this sheet mean for someone in my situation, and is there an approved treatment I should consider instead?
2. Here are the medicines and supplements I take. Do any of them interact with Rubiscolin? This sheet records none published, which does not mean none exist.
3. Which side effects should make me stop and call you, for example no human adverse-event data exist: no published study has administered rubiscolin to people?
4. Do any of the cautions on this sheet apply to me, such as: Not a medicine: no FDA application or label, and no approval anywhere?
5. What should we check before I start and while I am on it (blood tests, blood pressure, weight), and how often?

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