Morphiceptin

Also called: beta-casomorphin-4 amide; YPFP-NH2; Tyr-Pro-Phe-Pro-NH2

What it is

Morphiceptin is the opioid tetrapeptide Tyr-Pro-Phe-Pro-NH2, the amide of beta-casomorphin-4 from cow's-milk beta-casein, characterized in 1981 as a potent, highly selective mu-opioid-receptor agonist (PMID 6259732). It is a classic pharmacological tool and scaffold for mu-opioid analogs, studied alongside endomorphin-2 (PMID 15857121). It is a research opioid 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 approved-drug record for morphiceptin (searched November 7, 2026). It is a milk-casein-derived opioid peptide used since 1981 as a selective mu-opioid-receptor pharmacological tool and analog scaffold; 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

Morphiceptin is a research opioid peptide; it has never been given to people as a treatment. The work is in receptor assays, cells and animals, where synthetic peptide or its analogs are used 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: morphiceptin, a potent selective mu-opioid agonist** (In Vitro, 1981). Morphiceptin (Tyr-Pro-Phe-Pro-NH2) was characterized as a potent and specific agonist for the mu (morphine) opioid receptor — selective over the delta and kappa receptors — establishing a small milk-casein-derived peptide as a valuable mu-specific pharmacological tool (the founding study). **PMID 6259732**

• **Morphiceptin / endomorphin-2 analogs: mu binding and antinociception** (Animal, 2006). Analogs of endomorphin-2 and morphiceptin with phenylalanine-mimic residues were synthesised and assessed; mu-opioid binding affinities were measured and selected analogs showed potent antinociceptive activity in the mouse hot-plate test, with brain-homogenate half-lives giving insight into their degradation — morphiceptin serving as a mu-selective scaffold (a preclinical study). **PMID 16682191**

Interactions

A PubMed search for interaction studies of this compound with any drug (November 7, 2026, 12 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 morphiceptin to people • As a selective mu-opioid agonist, the class risks of mu-opioids (tolerance, dependence, respiratory depression, sedation) would be expected concerns — a mechanistic inference, not human data • Its analgesia in animals is naloxone-reversible, confirming opioid-receptor-mediated action (PMID 22960407) • Material sold online as 'morphiceptin' 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 morphiceptin • It is a research opioid peptide and pharmacological tool, not a treatment • Its mu-opioid activity warrants caution about opioid effects (including respiratory depression) in any use

Five questions to ask

1. Morphiceptin 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 Morphiceptin? 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 morphiceptin 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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