Nocistatin (NST)

Also called: NST; Nocistatin

What it is

Nocistatin (NST) is an endogenous neuropeptide cut from prepronociceptin, the same precursor that makes nociceptin / orphanin FQ, but with largely opposite actions. It blocks the allodynia and hyperalgesia nociceptin induces and blunts inflammatory pain (PMID 9521323), suppresses feeding (PMID 10924690) and protects learning and memory (PMID 10998544); its active core is the conserved C-terminal hexapeptide Glu-Gln-Lys-Gln-Leu-Gln. It does not bind the nociceptin receptor and its own receptor is unidentified (PMID 25345611). It is a 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 substance record for nocistatin (searched November 6, 2026). It is an endogenous human peptide; there is no therapeutic development of nocistatin itself, and no registered interventional trial of giving it to people. It is studied as a pain- and feeding-modulating peptide, and the search for its receptor is ongoing.

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

No established human dose

Nocistatin is an endogenous human peptide that has never been given to people as a treatment. The human evidence is its presence in brain and cerebrospinal fluid; the functional studies are in animals and cells, where it is injected into the brain or spinal fluid or applied to tissues 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: nocistatin blocks nociceptin-induced pain** (Animal, 1998). The discovery paper. A second bioactive peptide, named nocistatin, was found in the nociceptin precursor and isolated from bovine brain. Given into the spinal fluid of rodents, nocistatin blocked the allodynia and hyperalgesia that nociceptin causes and attenuated prostaglandin-E2 pain; the activity lay in its conserved C-terminal hexapeptide. Anti-nocistatin antibody lowered the threshold for nociceptin allodynia. Nocistatin did not bind the nociceptin receptor but bound brain and spinal-cord membranes with high affinity — a new peptide opposing nociceptin in pain (an animal and binding study). **PMID 9521323**

• **Nocistatin, a novel peptide from the N/OFQ precursor** (Review, 2000). A review of nocistatin as a bioactive peptide from the prepronociceptin precursor, present in spinal cord, brain and human cerebrospinal fluid. It blocks the allodynia and hyperalgesia induced by nociceptin and by prostaglandin E2, attenuates inflammatory hyperalgesia from formalin or carrageenan, reverses nociceptin's blunting of morphine analgesia at picogram doses, and counteracts the learning and memory impairment caused by nociceptin or scopolamine — the activity residing in the conserved C-terminal hexapeptide. **PMID 10998544**

Interactions

A PubMed search for interaction studies of this compound with any drug (November 6, 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 nocistatin to people • In animals it suppresses feeding (PMID 10924690) and modulates pain and sensory channels (PMIDs 9521323, 27362459) — effects of a signalling peptide, not a safety profile • Its effects in animals appear over narrow, sometimes very low (picogram) dose ranges rather than scaling simply with amount (PMID 10998544) • Material sold online as 'nocistatin' 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 nocistatin • It is a laboratory research peptide, not a treatment • Its receptor is unidentified, so its full pharmacology in people is unknown

Five questions to ask

1. Nocistatin (NST) 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 Nocistatin (NST)? 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 nocistatin 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?

Grey Peptides is a vendor-neutral encyclopedia: it sells nothing and names no seller. This sheet is educational, not medical advice, and is not a prescription.