Serpinin

Also called: Serpinin; Serpinins; pGlu-serpinin; Pyroglutaminated serpinin; Serpinin-RRG

What it is

Serpinin is an endogenous peptide family (serpinin, pyroglutaminated pGlu-serpinin, serpinin-RRG) cut from the C-terminus of chromogranin A (CHGA), the same precursor as catestatin and pancreastatin. Unlike those cardio-suppressive cousins, serpinin and pGlu-serpinin act as beta-adrenergic-like positive cardiac inotropes and lusitropes through the beta1-receptor/cAMP/PKA pathway (PMID 22459152); pGlu-serpinin protects the heart from ischemia/reperfusion injury (PMID 26400960) and cells and neurons from death (PMID 21537909), and plain serpinin drives secretory-granule biogenesis (PMID 21436258). 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 serpinin (searched November 6, 2026). It is an endogenous human peptide; there is no therapeutic development of serpinin itself, and no registered interventional trial of giving it to people. It is studied as a chromogranin-A-derived cardiac, neuroprotective and granule-biogenesis modulator, which remains preclinical.

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

No established human dose

Serpinin is an endogenous human peptide that has never been given to people as a treatment. The work is in animals, isolated organs and cells, where serpinin and pGlu-serpinin are applied at experimental nanomolar concentrations 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:

• **Serpinins: granule biogenesis, cell death and cardiac function** (Review, 2012). A review of the serpinin peptide family (serpinin, pGlu-serpinin and serpinin-RRG), cut from the C-terminus of chromogranin A. Serpinin up-regulates protease nexin-1 to drive secretory-granule biogenesis via a cAMP-PKA-Sp1 pathway; pGlu-serpinin protects neurons and pituitary cells against oxidative stress and, in the isolated rat heart, exerts a concentration-dependent positive inotropic effect through a cAMP-PKA pathway — profound effects across endocrine, nervous and cardiac systems. **PMID 22834799**

• **Serpinin and pGlu-serpinin are positive cardiac inotropes** (In Vitro, 2012). Serpinin peptides were detected in the rat heart, and in the isolated perfused heart serpinin and pGlu-serpinin exerted dose-dependent positive inotropic (stronger contraction) and lusitropic (faster relaxation) effects within 5 minutes, pGlu-serpinin being the more potent (from 1 nM). Both acted through a beta1-adrenergic receptor / adenylate cyclase / cAMP / PKA pathway — making them beta-adrenergic-like agonists, the opposite of the beta-blocker-like vasostatin-1 and catestatin (an isolated-organ result). **PMID 22459152**

Interactions

A PubMed search for interaction studies of this compound with any drug (November 6, 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 serpinin to people • Serpinin and pGlu-serpinin are beta-adrenergic-like positive cardiac stimulants in animal hearts (PMID 22459152), so cardiovascular effects would be expected if administered • pGlu-serpinin is cardioprotective in ischemia/reperfusion models (PMID 26400960) — a preclinical finding, not an established human effect • Material sold online as 'serpinin' 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 serpinin • It is a laboratory research peptide, not a treatment • Its beta-adrenergic-like cardiac action makes unsupervised use potentially hazardous

Five questions to ask

1. Serpinin 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 Serpinin? 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 serpinin 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.