Ponericin

Also called: Ponericin-W1; Ponericin-L1; Ponericins

What it is

Ponericins are linear, cationic, alpha-helical antimicrobial peptides from ant venom, first isolated from Pachycondyla goeldii (2001). Each is a short (~27-34 amino acid) helix with no disulfide bonds that inserts into and breaks microbial membranes, with broad activity against drug-resistant bacteria, fungi and biofilms (PMIDs 36109567, 32861765); ponericin W1 also binds DNA (PMID 34441696), and designed analogs heal wounds in mice (PMID 35861280). Ponericins are research peptides, not approved medicines, and have never been given to people as an approved treatment.

Approval status

Research Chemical. Not approved drugs: Drugs@FDA and the openFDA label endpoint hold no record, and FDA GSRS and ChEMBL hold no approved-drug record for ponericin (searched November 8, 2026). Ponericins are ant-venom antimicrobial peptides studied as antibacterial, antifungal, antibiofilm and wound-healing leads and engineering scaffolds; there is no registered interventional trial of giving a ponericin to people as an approved treatment.

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

No established human dose

Ponericins are ant-venom research peptides; no ponericin is an approved treatment. The work here is in microbes, cultured cells and animals, often with engineered analogs, at experimental amounts that do not carry over to people, so no amount is printed here.

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:

• **A silkworm ponericin-like peptide against drug-resistant Pseudomonas** (In Vitro, 2022). A silkworm peptide identical to the ant-venom ponericin (Bm-ponericin-L1), made in response to Pseudomonas infection, disrupted the membranes of drug-resistant hospital pathogens (confirmed by microscopy), broke up their biofilms, and did not damage red blood cells (an in-vitro study). **PMID 36109567**

• **Designed ponericin-W1 analogs heal wounds in mice** (Animal, 2022). Rationally designed peptides based on ponericin-W1 killed Gram-negative bacteria without provoking resistance over many generations and sped wound healing in a mouse skin-infection model, combining potency with tissue repair (a preclinical study). **PMID 35861280**

Interactions

A PubMed search for interaction studies of this compound with any drug (November 8, 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 approved-treatment human safety data exist for ponericins • Ponericins disrupt membranes but are relatively gentle on host cells, with low red-cell toxicity in the lab (PMIDs 36109567, 32861765) — research findings, not approved-drug data • They come from ant venom and at least one also binds DNA (PMID 34441696), effects to weigh in any development • Material sold online as 'ponericin' is an unregulated research chemical of unverified content	• Not approved medicines: no FDA application or label, and no approval anywhere • No approved human dosing, interaction, pregnancy or long-term safety data exist for ponericins • They are ant-venom research antimicrobial peptides, not treatments • Their membrane-disrupting activity and their binding of microbial DNA warrant caution about effects on host cells

Five questions to ask

1. Ponericin 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 Ponericin? 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 approved-treatment human safety data exist for ponericins?
4. Do any of the cautions on this sheet apply to me, such as: Not approved medicines: 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.