Brevinin

Also called: Brevinin-1; Brevinin-2; Brevinins

What it is

Brevinins are two large families of cationic, amphipathic, alpha-helical antimicrobial peptides from frog skin — brevinin-1 (~24 amino acids) and brevinin-2 (~33-34) — first isolated from the Japanese frog Rana brevipoda (Morikawa et al., 1992) and defined by a C-terminal disulfide 'Rana box' loop. They disrupt microbial membranes broadly and include anticancer and anti-inflammatory members, but are strongly hemolytic and heavily engineered to reduce toxicity (PMIDs 40867979, 38611812). They are research antimicrobial peptides, not approved medicines, and have never been given to people as a treatment.

Approval status

Research Chemical. Not drugs: Drugs@FDA and the openFDA label endpoint hold no record, and FDA GSRS and ChEMBL hold no approved-drug record for brevinin peptides (searched November 7, 2026). They are frog-skin antimicrobial peptides studied as antibacterial, anticancer and anti-inflammatory leads and as engineering scaffolds; there is no therapeutic development to market and no registered interventional trial of giving a brevinin to people.

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

No established human dose

Brevinins are frog-skin research peptides; none has been given to people as a treatment. The work is in bacteria, cultured cells and animals, often with engineered analogs, 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:

• **Consensus-sequence Brevinin-2 peptides against multidrug-resistant bacteria** (In Vitro, 2026). Using the positional frequency of amino acids across the brevinin-2 family, four consensus peptides were synthesised and tested against multidrug-resistant bacteria; one (G37) showed broad-spectrum activity including against carbapenemase-resistant strains and killed quickly, while two others showed selectivity toward Gram-positive versus Gram-negative bacteria — though moderate hemolysis remained a challenge (an in-vitro design study). **PMID 42734343**

• **Engineering a brevinin-2 peptide to decouple potency from toxicity** (In Vitro, 2025). Removing the C-terminal Rana box from the strongly hemolytic brevinin-2OS and adding a D-leucine substitution cut hemolysis more than ten-fold while preserving antibacterial activity, improving the therapeutic index against Gram-positive bacteria more than twenty-fold — showing the Rana box drives toxicity rather than activity in this scaffold (an in-vitro SAR study). **PMID 40867979**

Interactions

A PubMed search for interaction studies of this compound with any drug (November 7, 2026, 2 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 a brevinin to people • Hemolysis and cytotoxicity to host cells are the defining safety concern for brevinins — many natural members are strongly hemolytic, and most engineering work aims specifically to reduce it (PMIDs 40867979, 40458657) — a design issue, not human data • Some brevinins and derivatives are cytotoxic to cancer cells by design (PMID 40458657); selectivity for target over healthy cells is an open research question • Material sold online as a 'brevinin' is an unregulated research chemical of unverified content	• Not medicines: no FDA application or label, and no approval anywhere • No human dosing, interaction, pregnancy or long-term safety data exist for administered brevinins • They are frog-skin research antimicrobial peptides, not treatments • Their strongly membrane-lytic, hemolytic nature warrants particular caution about effects on host cells

Five questions to ask

1. Brevinin 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 Brevinin? 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 a brevinin to people?
4. Do any of the cautions on this sheet apply to me, such as: Not 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.