Piscidin

Also called: Piscidin 1; Tilapia piscidin; TP4; Piscidins; Piscidin 4

What it is

Piscidins are a family of short (~18-26 amino acid), linear, cationic, often histidine-rich amphipathic alpha-helical antimicrobial peptides from the mast cells of fish, first described by Silphaduang & Noga (2001). Members include piscidin 1-7 and tilapia piscidins TP1-4. They disrupt microbial membranes (broad-spectrum antibacterial, antifungal, antiviral), contribute to fish innate immunity, and include a selective anticancer member, tilapia piscidin 4 (PMIDs 42134155, 42063841). They are research 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 piscidin peptides (searched November 7, 2026). They are fish antimicrobial peptides studied as antibacterial, antifungal, anticancer and aquaculture-immunity leads and as engineering scaffolds; there is no therapeutic development to market and no registered interventional trial of giving a piscidin to people.

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

No established human dose

Piscidins are fish research peptides; none has been given to people as a treatment. The work is in bacteria, cultured cells and fish/animal models, often with engineered, encapsulated or gene-delivered forms, 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:

• **A single L-to-D change tunes how piscidin-2 disrupts membranes** (In Vitro, 2026). Replacing one residue of a piscidin-2 variant with its mirror-image D-form kept the overall helical character but created an N-terminal aromatic anchor that buried the peptide more deeply in the lipid bilayer, increasing membrane tension, pore-forming kinetics and antibacterial activity — a biophysical structure-activity study (NMR and CD). **PMID 42912617**

• **Dietary encapsulated piscidin 1 modulates immunity in seabream** (Animal, 2026). Piscidin 1 encapsulated in microparticles and fed to gilthead seabream stayed structurally intact after oral delivery and modulated the fish's systemic immunity and gene expression along the gut-skin-brain axis, with effects on pigmentation and muscle texture — supporting its potential as a multifunctional aquaculture feed additive. **PMID 42754065**

Interactions

A PubMed search for interaction studies of this compound with any drug (November 7, 2026, 4 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 piscidin to people • As membrane-active peptides, hemolysis and cytotoxicity to host cells are the central safety concern; some piscidins and self-assembled forms are reported non-hemolytic in the lab (PMID 42134155) — a research finding, not human data • Tilapia piscidin 4 is cytotoxic to cancer cells by design (PMID 42063841); selectivity for tumour over healthy cells is an active research question • Material sold online as a 'piscidin' 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 piscidins • They are fish research antimicrobial/anticancer peptides, not treatments • Their membrane-active nature (hemolysis/cytotoxicity) warrants caution about effects on host cells in any use

Five questions to ask

1. Piscidin 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 Piscidin? 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 piscidin 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.