Epithalon

Synthetic Tetrapeptide (Khavinson-line Bioregulator)

What It Is & What It Does

Epithalon (Ala-Glu-Asp-Gly) is a synthetic version of a naturally occurring pineal peptide, developed by the same Khavinson research group behind Thymalin. It's studied primarily for telomerase activation and pineal/circadian function — and it has one of the more genuinely contested evidence profiles in this category, worth presenting both ways.

What The Research Shows

- In vitro: Epithalon extended the replicative lifespan of human somatic cells in culture beyond their normal Hayflick limit — the original basis for telomerase-activation claims.
- In mice, Epithalon administration increased maximum lifespan by 12-14% in Khavinson-group studies.
- The same 266-patient, 6-8 year Khavinson & Morozov trial covered in the Thymalin research (control, Thymalin-only, Epithalon-only, and combined groups) reported roughly a 1.6-1.8-fold reduction in mortality in the Epithalon-containing arms — but the trial was unblinded, non-randomized, and its methodology isn't accessible in English.
- Important counter-finding: a 2025 independent UK lab confirmed Epithalon's telomerase-activating effect in cell culture, but also found it activated a cancer-related telomere-lengthening mechanism in tumor cells — a real safety-relevant finding that cuts against a simple "more telomerase is better" framing.
- The claimed melatonin-restoration mechanism is directly disputed: Khavinson's group reported Epithalon restored melatonin/cortisol circadian rhythm and improved glucose tolerance in old primates, but an independent French lab (Djeridane et al., 2003) tested the same compound on isolated rat pineal glands and found no effect on melatonin secretion at any concentration.

Reported Side Effects

- Limited systematic human adverse event data
- Injection site reactions reported anecdotally
- No randomized controlled trial has ever been conducted in humans for any indication

Regulatory Status

Not FDA-approved. Not evaluated by Western regulatory bodies. Research use only — the human anti-aging and lifespan claims circulating for this peptide substantially outrun the independent evidence, and the 2025 tumor-cell finding is a real consideration, not a footnote.

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2026 regulatory update

2026 U.S. Regulatory Update

In April 2026, Epithalon was one of twelve peptides the FDA reinstated to Category 1.

On July 23-24, 2026, the FDA's Pharmacy Compounding Advisory Committee (PCAC) met to vote on whether seven previously-restricted peptides should be added to the Section 503A Bulk Drug Substances list -- the list that determines what compounding pharmacies can legally prepare from a prescription. This is separate from, and later than, the April 2026 reinstatement to FDA Category 1 covered elsewhere in this document.

On July 24, 2026, PCAC voted 7-5 (one abstention) to recommend Epithalon for the 503A Bulks List.

A favorable PCAC vote is a recommendation, not a legal change. The FDA is not bound by it, and any formal addition to the 503A Bulks List still requires notice-and-comment rulemaking, a process that can take well over a year. As of this update, none of the peptides discussed below are legal to compound under 503A.