

*"Pearls"
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Veterinary Medicine*



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AT A GLANCE

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Integrative Medicine – Geriatrics - Products

Bioregulator Peptides and Peptide Therapy

Peptides are short chains of amino-acid that act as endogenous signaling molecules or therapeutic agents. More than 7,000 naturally occurring peptides have been identified, and peptide drugs include insulin, desmopressin, oxytocin, calcitonin, vasopressin, deslorelin, GLP-1 agonists, and GIP/GLP-1 agents. In veterinary medicine, alpha-casozepine ([Zylkene](#) or [Lactium](#) [[Biotics product](#), [video](#), [Swanson product](#)]) is an example of a milk-casein hydrolysate peptide with anxiolytic and sleep-supportive activity used in animals and people. [[ref](#)]

The 2 major classes of peptides are Bioregulator peptides and Signaling peptides (usually simply called peptides). Peptide therapy is best regarded as adjunctive rather than foundational. Peptides inform rather than force physiological responses [[ref](#)] but may allow lower doses of conventional medications. Core factors—nutrition, sleep, exercise, toxin reduction, gut health, metabolic dysfunction, stress control and underlying inflammation—should be optimized before or concurrent with any peptide regimen. Although veterinary studies remain limited, peptide therapy in animals is expected to parallel human use because these small molecules are highly conserved across species and many are derived from animal products.

Signaling peptides (15–43 amino acids) act through cell-surface receptors or extracellular signaling pathways for

faster but shorter-lived effects compared to Bioregulator peptides. Interestingly, the FDA classifies proteins with over 40 amino acids as biologics [[ref](#)] whereas the cutoff for peptides is considered to be ≤50 amino acids; larger are termed proteins [[ref](#)] [[ref](#)].

In July the FDA's Pharmacy Compounding Advisory Committee voted to allow compounding of BPC-157, KPV, TB-500, MOTS-c, Semax, and Epitalon, while rejecting emideltide; however, final rules may take a year or longer. Other commonly used peptides include thymosin alpha-1 (TA-1), LL-37, and GHK-Cu.

BPC-157 supports gut barrier integrity and angiogenesis [[ref](#)] [[ref](#)] [[ref](#)]; TB-500 guides actin-mediated repair [[ref](#)]; GHK-Cu modulates ~4000 healing genes [[ref](#)]; KPV dampens mucosal inflammation [[ref](#)]; and thymosin α-1 rebalances immunity [[ref](#)]. Note that while historically marketed interchangeably as veterinary "TB-500," Thymosin Beta-4 (TB4) is the full 43-amino-acid parent protein exerting broad systemic repair, whereas the current TB-500 specifically designates the synthetic 17–23 amino acid fragment isolated for targeted musculoskeletal regeneration [[ref](#)].

The synthetic peptide, Epitalon or Epithalon, was derived from the natural pineal peptide called epithalamin [[ref](#)]. Among many beneficial effects, Epitalon restored impaired wound healing in a high glucose-injured human retinal pigment epithelial cell line [[ref](#)]. Animal studies showed chemically induced tumor incidence dropped from 81% in controls to 26% when treated with Epitalon [[ref](#)] [[ref](#)].

Veterinary-specific peptide products include [Vital Vet Therapeutics](#) and [Pettides](#) (combination of BPC-157, KPV, Immune Peptide A2) and [Head to Tail](#) (BPC-157) by [Integrative Peptides](#). NB: I have a practitioner account with and personally use Integrative Peptides products; I have requested but have not yet received information from Vital Vet Therapeutics. Recently, plant-derived peptides by [Nuritas](#) have been

