



Product Data Sheet

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<b>Cat#</b>	<b>CP-53886</b>
<b>Description:</b>	PAL-KTTKS (PAL-Lys-Thr-Thr-Lys-Ser) (MW: 802.05)
<b>Size:</b>	5 mg
<b>Purity:</b>	>95%
<b>CAS no.:</b>	214047-00-4
<b>Formula:</b>	C <sub>39</sub> H <sub>75</sub> N <sub>7</sub> O <sub>10</sub>
<b>Synonyms:</b>	Matrixyl, Palmitoyl Pentapeptide 3, Palmitoyl Pentapeptide 4
<b>Solubility:</b>	Distilled water, up to 2mg/ml
<b>Store:</b>	Store at -20oC.

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The palmitoyl pentapeptide (pal-KTTKS) is a synthetic material that was designed as a topical agent to stimulate collagen production and thus provide a skin anti-wrinkle benefit. It is a matrikine. Matrikines are messenger peptides capable of regulating cell activities by interacting with their specific receptors. They activate certain genes involved in the process of extracellular matrix renewal and cell proliferation. Palmitoyl pentapeptide activates the neosynthesis of extracellular matrix macromolecules thereby providing an anti-wrinkle effect.

Pal-KTTKS is a five-sided molecule consisting of collagen fragment peptides lysine, threonine and serine, attached with palmitoyl, a fatty acid to enhance oil solubility for better skin penetration. The palmitoyl in palmitoyl pentapeptide, is derived from interferon-alpha. It is structurally related to the precursor of collagen type I (procollagen type I). Known as the KTTKS peptide, pro-collagen I has stimulated cellular fibroblast production in laboratory cultures.

Research has found that when added to the culture of fibroblasts (the key skin cells), palmitoyl pentapeptide stimulated the synthesis of the key constituents of the skin matrix: collagen, elastin and glucosamnoglycans. Studies have shown that Pal-KTTKS was well tolerated by the skin and provided significant improvement for reduction in wrinkles/fine lines. Other studies showed at least some improvement in various objective and subjective measures of wrinkles. No side effects have been reported.

Palmitoyl pentapeptide been launched in 2000 as an active ingredient for the personal care industry under the trade-name Matrixyl by the French cosmetic active ingredient manufacturer Sederma SAS. In 2002, two teams of investigators said palmitoyl pentapeptide is as effective as retinol in improving the effects of photo-aging but lacks the side effects often associated with retinol.

**Reference:** L. R. Robinson (2005) int J Cosmet Sci 27, 3:155; Katayama K (1993) J Biol Chem. 268:9941-9944.

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