Assessment of anti-aging properties of novel natural compounds-peptide derivatives

Off-patent therapeutic molecules and phytochemicals, can downregulate these genes. Using candidates. Importantly, independent studies have demonstrated that compounds, including small molecules targeting Facsin and Cdk2, this study identified potential drug repositioning non-melanoma cancers with good efficacy, but significant toxicity. Along with proprietary expressing both genes at low levels in melanoma, but the majority of normal skin samples lysed to identify pairs present in functionally redundant pathways. Synthetically lethal distributions deviant from normal, and which showed no overlap of low expression in mel-

dian IL-4 (ATCC, USA). Also, anti-aging properties were assessed with three independent in vivo tests: primary skin irritation (OECD 404), acute inflammatory activity (OECD 405), and matrix metalloproteinase-12 (MMP-12) activity inhibition assay. As a result, both 2,5-DHBA-peptide derivatives did not show cytotoxicity at 10, 20 and 50 μM. Tetratetrapeptide alone did not show increased collagen production and MMP-1 inhibitory activity, but the 2,5-DHBA-tetrapeptide derivative increased collagen production by about 25% and inhibited the UVB (50 J/cm²)-induced MMP-1 expression by about 40% compared to control group (p<0.05). Also, pentatetrapeptide alone did not show increased collagen production and MMP-1 inhibitory activity, but the 2,5-DHBA-pentatetrapeptide derivative increased collagen production by about 20% and inhibited the UVB (50 j/cm²)-induced MMP-1 expression by about 40% compared to control group (p<0.05). These results proved the potential use of newly synthesized two 2,5-

DHBA-peptide derivatives as cosmetic ingredient for anti-aging.

Fascin and Cdk2 are synthetic lethal partners with exceptional potential as joint therapeutic targets in malignant melanoma

Atopic Dermatitis is a common skin condition that clinically presents as erythematic, dry, pruritic skin. While multiple factors contribute to the pathophysiology of AD, antegrade transduction of Th2 cytokines plays a prominent role in the disease. Synthetic lethal pathways have been suggested as potential therapeutic targets for AD. In this study, we investigated the potential of new compounds targeting Fascin and Cdk2, which are two proteins involved in the pathogenesis of AD.

Minipig model of atopic dermatitis: Assessment of in vivo and in vitro activity of recombinant porcine interleukin-4 and interleukin-13

We studied the therapeutic potential of recombinant porcine interleukin-4 (rIL-4) and interleukin-13 (rIL-13) in a minipig model of AD. Minipigs were treated with rIL-4 and rIL-13, and their efficacy was evaluated using multiple endpoints, including clinical signs, histology, and cytokine levels. The results showed that rIL-4 and rIL-13 were effective in reducing the severity of AD symptoms, with rIL-4 showing a stronger effect than rIL-13.

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Biodegradable bioadhesive nanoparticle delivery of camptothecin for the treatment of PDV squamous cell carcinoma

We developed a novel biodegradable bioadhesive nanoparticle delivery system for the treatment of PDV squamous cell carcinoma. The system consists of bioadhesive nanoparticles (BNPs) formulated with camptothecin, a cytotoxic drug used to treat various cancer types. The nanoparticles were designed to adhere to tumor tissue and release the drug upon contact, ensuring sustained and targeted drug delivery. The system was evaluated in in vitro and in vivo models, demonstrating promising therapeutic efficacy in tumor suppression and inhibition of metastasis formation.

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Peptides generally have biocompatibility and high activity, but their cosmetic applications are often limited by susceptibility to proteolysis which was resulted in to vivo fragility. Therefore, N-terminal extensions of small peptides, such as tripeptide EGF-3 or pentapeptide PEG-4, are commonly used to increase the stability of peptide degradation. Hereby we investigated safety and activity of the newly synthesized two peptide derivatives which were prepared by introducing 2,5-dihydroxybenzoic acid on N-terminal of peptide/protein conjugate. We used the Peptide Sequences (tetra- and pepta- peptides) for their chemical stability in vivo and in vitro, low inhibitory collagenase. And selected small molecule, 2,5-DHBA showed S50 values of less than 0.05 mM in DPPH radical scavenging assay. Thus, conjugating 2,5-DHBA with functional peptides not only stabilizes them but also controls their availability. We evaluated the anti-sense efficacy of the peptide conjugates in vivo. We evaluated the safety of two synthesized 2,5-DHBA conjugated with tetrapeptide and pentapeptide respectively, we assessed cytotoxicity with MIT assay on human dermal fibroblast (ATCC, USA). Also, anti-aging properties were assessed with three independent in vivo tests: primary skin irritation (OECD 404), acute inflammatory activity (OECD 405), and matrix metalloproteinase-12 (MMP-12) activity inhibition assay. As a result, both 2,5-DHBA-peptide derivatives did not show cytotoxicity at 10, 20 and 50 μM. Tetratetrapeptide alone did not show increased collagen production and MMP-1 inhibitory activity, but the 2,5-DHBA-tetrapeptide derivative increased collagen production by about 25% and inhibited the UVB (50 J/cm²)-induced MMP-1 expression by about 40% compared to control group (p<0.05). Also, pentatetrapeptide alone did not show increased collagen production and MMP-1 inhibitory activity, but the 2,5-DHBA-pentatetrapeptide derivative increased collagen production by about 20% and inhibited the UVB (50 j/cm²)-induced MMP-1 expression by about 40% compared to control group (p<0.05). These results proved the potential use of newly synthesized two 2,5-DHBA-peptide derivatives as cosmetic ingredient for anti-aging.

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So far, many studies have been performed to study interleukin-4 and interleukin-13 in AD. However, the results are inconsistent, and the therapeutic potential of these compounds is still under investigation. In this study, we evaluated the therapeutic potential of recombinant porcine interleukin-4 (rIL-4) and interleukin-13 (rIL-13) in a minipig model of AD. Minipigs were treated with rIL-4 and rIL-13, and their efficacy was evaluated using multiple endpoints, including clinical signs, histology, and cytokine levels. The results showed that rIL-4 and rIL-13 were effective in reducing the severity of AD symptoms, with rIL-4 showing a stronger effect than rIL-13.

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