GHK-Cu caps

Background

Copper peptide GHK-Cu is a naturally occurring copper compound of the tripeptide glycyl-L-histidyl-L-lysine. The peptide has shown strong affinity for copper and is naturally detected in saliva and urine. The tripeptide was initially isolated in human plasma, and it was noticed that it was naturally released from tissues following an injury. [1] The peptide's ability to bind copper ions and precise activation for targeted gene expression involved in natural healing and regenerative properties make it popular for multiple anti-aging therapies. GHK-Cu is associated with accelerated wound healing, through its mechanism of action to promote angiogenesis (e.g., the formation of new blood vessels), nerve outgrowth, and stimulates antioxidant enzyme levels. [1, 10, 11] The peptide has already been used frequently in hair and skin products connected to potent protective and regenerative actions. [2]

The human peptide GHK (glycyl-l-histidyl-l-lysine) is also associated with increasing collagen, elastin, and glycosaminoglycan synthesis, coupled with enhancing the function of dermal fibroblasts. [1] In its multiple health positive biological actions, the significant role GHK-Cu plays in augmented skin and tissue repair coupled with enhanced cell protective properties are gaining the most attention for therapeutic applications. In other words, this peptide has multiple healing and protective properties with some that remain to be discovered. [1] It is likely that positive GHK-Cu actions originate from its affinity to bind copper ions and the role it plays in copper metabolism. [1, 4] The current supplement blend is available in capsules.

Research

Pickart and Margolina (2018) state that the human peptide GHK (glycyl-l-histidyl-l-lysine) is capable of many biological actions such as increases collagen, elastin, and glycosaminoglycan synthesis, stimulates blood vessel and nerve outgrowth, and supports the function of dermal fibroblasts. [1] Recent comprehensive transcriptional responses data used to examine genome-wide effects of GHK find the molecule increases gene expression in 59% of the genes, while suppressing it in 41%, in other words it up- and down-regulates a sizable quantity of human genes. [1, 5, 6] By employing connectivity map tools and new understandings of genome-wide actions of peptides and molecules, researchers can better understand mechanism of action and effects on gene expression, e.g., applying specialized molecules and peptides to recalibrate the human genome to health. [7]

Externally, GHK-Cu plays a role in restoration of youthful skin appearance by regulating protein breakdown in skin (reducing buildup of damaged proteins) and bolstering strength in the dermal matrix. [8, 9] As a conduit for overall health, GHK-Cu is associated with powerful antioxidant and anti-inflammatory actions. The molecule can deactivate damaging free radical by-products of lipid peroxidation, additionally decreasing iron release from ferritin (a stimulus of lipid peroxidation and source of free radical release). [1, 12]

Conclusion

GHK has actions to improve tissue repair coupled with potent cell protective abilities and anti-inflammatory properties. [1] Additionally, GHK is thought to provide comprehensive anti-aging and age-related disease support by reducing nuclear factor kappa-light-chain-enhancer (NFκB) molecules and pro-activation potential of the proteasome system which promotes DNA repair and cell cleansing. [1] Mitchell, Vargas, & Hoffmann (2016) state that the nuclear factor kappa B (NFκB) transcription factors family is a primary regulator of immune development & responses, also cancer and inflammation, suggesting GHK's age-related disease protection is associated with actions to moderate NFκB signaling. [3]

References

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