Enhancement of Skin Absorption of GHK-Cu Using Liposomes and Cell Penetrating Peptides

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In this study, the skin permeability of little skin-permeable anti-wrinkle peptides GHK-Cu was measured by using liposomes and cell penetrating peptides, arginine oligomers R4(tetra-D-arginine), R6(hexa-D-arginine). (1) In cases when GHK-Cu is dissolved in distilled water; the cumulative permeation in 24 hours was 3.86%. (2) In cases when GHK-Cu is applied to liposome formulation; the cumulative permeation in 24 hours was 7.4%. (3) In cases when R4 is added to GHK-Cu and dissolved in distilled water; the cumulative permeation in 24 hours was 8.68%. (4) In cases when R6 is added to GHK-Cu and dissolved in distilled water; the cumulative permeation in 24 hours was 4.69%. (5) In cases when R4 is added to GHK-Cu and applied to liposome formulations; the cumulative permeation in 24 hours were 15.46%. (6) In cases when R6 is added to GHK-Cu and applied to liposome formulations; the cumulative permeation in 24 hours was 8.64%. This experiment showed that skin absorption of GHK-Cu was increased by liposomes and skin absorption of GHK-Cu was also enhanced by cell penetrating peptides, and R4 showed higher effect than R6 in GHK-Cu.