

# **Characterization of collagen matrices crosslinked using microbial transglutaminase**

何秀娥,許明照

Chen RN;Ho HO;Sheu MT

## **Abstract**

In search of a new approach for crosslinking collagen-based biomaterials, we examined the effect of microbial transglutaminase (MTGases) as a crosslinking reagent on collagenous matrices made from porcine type I collagen. As the results revealed, MTGase exhibited a crosslinking action that raised the viscosity of the collagen solution. Matrices crosslinked with MTGase at the low pH values of pH 3 and 4 exhibited higher tensile strengths than those at high pH values. In comparison with untreated matrices, the denaturation temperatures of the corresponding matrices shifted toward higher temperatures. These enzyme-catalyzed crosslinked matrices were proven by MTT assay to be non-cytotoxic. In conclusion, this enzymatic method of using MTGase provides an alternative potential way for crosslinking collagen-based matrices.