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Natural silk of Pholcus phalangioides, a common home spider species for wound healing applications (Conference Paper)

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Abstract

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Spider silk contains peptides and biomolecules that able to stimulate and improve conditions of wound healing. In this study, we report the potential use of natural silk from common home spider, Pholcus phalangioides, on human keratinocyte cell line (HaCaT) and teeth pulp stem cell's proliferation and migration. The aim of this study was to examine the range of silk concentrations and their biological effects on the different type of cells. Our study showed that the silk is biocompatible and stimulated the proliferation of HaCaT and teeth pulp stem cells in a dose dependent manner after 24 and 48 hours. Selective effect of cellular migration was observed when the spider silk did not affect the migration of teeth pulp stem cells but only stimulated the migration of HaCaT after 24 hours. The ability of spider silk to stimulate cellular metabolic activity and migration could benefit research and development of biologically active wound dressings. © International Federation for Medical and Biological Engineering 2016.

Author keywords

HaCaT Spider silk Teeth pulp stem cells Wound healing and cell migration

Indexed keywords

Engineering controlled terms: Biocompatibility Biomedical engineering Cell culture Cells Cytology Molecular biology Stem cells

Compendex keywords: Cell migration Cellular migration Dose-dependent manner HaCaT Metabolic activity Research and development Spider silks Wound healing applications

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