

Technology Offer

Macrophage-stimulating Lipopeptide for wound healing

Reference Number
TO 02-00037

The Challenge

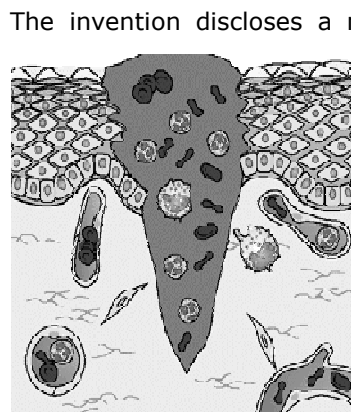
Macrophages play an essential role in the complex mechanisms of defence against infections and in wound healing. They are responsible for the production and secretion of various mediators like signal peptides, growth factors and cytokines. Although it is possible to use some of the mediators in the isolated form this is ineffective, as these mediators mostly have a half-life of only few minutes and their natural point of appearance, the optimal dosage and the interaction of these substances is not known in detail. Therefore it should be much more effective to use factors which stimulate macrophages to produce the necessary mediators. Some bacterial lipopeptides and their synthetic analogues were found to stimulate macrophages in vitro. This activity could not be verified in animal experiments in vivo.

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The Technology



Scheme of the wound healing process.
Source: ps paedagogik server

The invention discloses a macrophage activating lipopeptide isolated from Mycoplasma. This lipopeptide induces the migration of leucocytes into the area of infection and stimulates murine as well as human macrophages and monocytes to liberate cytokines and prostaglandines and to induce a high titer of chemokines in vivo. The mechanism of action of the inventive lipopeptide is the stimulation via the "toll-like receptor 2". The induced release of mediators promotes easier and faster wound healing by stimulation of natural signal cascades.



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Commercial Opportunity

The inventive macrophage activating lipopeptide can be used for the development of advanced wound care products especially for treatment of chronic wounds.

Advantages are:

- easy and reproducible isolation of natural macrophage activating lipopeptide
- synthetic macrophage activating lipopeptide available by simple chemical synthesis
- increased efficiency of wound care products
- suitable for various dressings and other preparations

Patent situation

European patent EP1077717 and Australian patent AU 756107 granted, further applications in USA, Canada and Japan pending.

Further Reading

Kaufmann A. et al. Infect Immun. 1999 Dec;67(12):6303-8

Intellectual Property
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