Polymeric system for local drug release

Development status

Phase 2

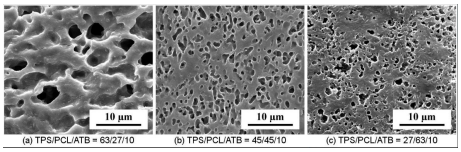
Feasibility study. There is a realistic design of the technology and the initial tests in the laboratory are leading to the specification of the technology requirements and its capabilities.

IP protection status

Protected by patent CZ 307056

Partnering strategy

licensing



Institution

The Institute of Macromolecular Chemistry, Czech Academy of Sciences (IMC)

Challenge

Systems with controlled and simultaneous local drug release represent a modern trend in contemporary human and veterinary medicine. This is due to their numerous advantages compared to conventional forms, especially the possibility to administer the drug in lower doses directly to the destination. This is associated with a reduction in fluctuations in plasma drug levels, a reduction in adverse side effects and an overall lower burden on the patient. Therefore, a number of systems for local release of hormones, anti-inflammatory agents, antibiotics and cytostatics are currently being introduced into medical practice. In line with this trend is the biodegradable composition according to our invention.

Description

Polymeric thermoplastic biodegradable composition for the production of liners for the treatment and prevention of local infections. Most of the currently investigated topical drug release systems are based on aqueous suspensions of microparticles or nanoparticles containing the drug, which are more or less stable. The basis of our system is a solid polymer mixture consisting of biocompatible and simultaneously biodegradable components and an antibiotic. The appropriate choice of components and morphology of the system can control the amount and rate of antibiotic release.

Commercial opportunity

In current clinical practice, there are at least three areas in which thermoplastic compositions according to the invention would find application: (i) treatment and prevention of joint replacement infections, (ii) treatment of skeletal infections (osteomyelitis of all known etiologies, pyogenic joint and soft tissue infections), and (iii) treatment of local infections in all other anatomical sites of the body.