Medicine / Pharma | Technology Offer

New strategy against multiresistant hospital microbe: Novel glycomimetics for the treatment of chronic Pseudomonas aeruginosa infections

Field of Application

Pseudomonas aeruginosa is a common, gram negative and rod-shaped bacterium that is both aerobic and anaerobic.

P. aeruginosa exhibits strong multiresistance against antibiotics and can also form biofilms. Chronic infections are thus easily able to persist.

In hospitals, the bacterium represents a major problem. The microbe lives mainly in humid environments such as respirator tubes, incubators, and wash basins.

The most frequent expression of *P. aeruginosa* infections is in the form of pneumonia in patients with cystic fibrosis and in patients with a depressed immune system or with AIDS, where infections are particularly severe. Urinary tract infections, enterocolitis, meningitis, otitis externa or infections of burn wounds are frequent complications triggered by *P. aeruginosa*.

State of the Art

Current medical treatment of *P. aeruginosa* infections do not lead to satisfying results. Therefore, the development of innovative drugs is essential to successfully combat this serious disease.

Innovation

A scientist at the University of Constance has recently developed a novel therapeutic approach to successfully fight the bacterium *P. aeruginosa*. Highly specific compounds were developed which are based on the natural ligand Mannose and which have a high affinity for the lectin LecB which is part of the biofilm of *P. aeruginosa*. These novel glycomimetics are able to inhibit the formation of the protective biofilm and thus make a more effective antibiotics therapy possible. The likelihood of new resistances developing is greatly reduced due to the fact that these novel substances are neither bacteriostatic nor bactericidal.

Advantages

- ✓ Promising candidates for the development of novel active compounds against the multiresistant hospital-based microbe *P. aeruginosa*.
- ✓ Resistance to the novel active substances is much less likely to develop.
- ✓ Considerable economic potential, because *P. aeruginosa* represents, with 10% of all hospital infections, the most frequently found hospital-based microbe in Germany.

Market Potential

The potential of the worldwide market of novel glycomimetics against a very common and dangerous hospital-borne microbe, which causes life threatening and difficult to treat infections, is deemed to be very high.

Technology Transfer

The Technologie-Lizenz-Büro GmbH is now offering suitable companies the opportunity to obtain a licence to this novel technology.

Patent Portfolio

A European and a US patent application are currently pending.

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