Press Release

Significant increase in bio-availability through LBL technology

Capsulution is testing an innovative formulation of active ingredients on animals

Berlin, March 25th 2008 - The Berlin-based nanotechnology company Capsulution NanoScience AG has successfully completed a preclinical, in-vivo study on increasing the bio-availability of poorly water-soluble active ingredients. In comparison to the non-formulated substance, a tripling of the bio-availability could be proved certain. With this the Capsulution AG has managed to prove the impressive strength of their patent-protected technology in pharmaceutical developments.

Many active ingredients pose a serious problem for pharmaceutical researchers. They are poorly water-soluble and therefore dissolve very inadequately or only very slowly in bodily fluids, for instance gastric juices. As a result, only a small proportion is dissolved and absorbed via the stomach wall or intestinal mucous membrane into the blood circulation whereas a much larger proportion of the active ingredient is simply excreted. Even among those active ingredient molecules reaching the blood circulation, however, only a small proportion of those reach the organ targeted for treatment. A much larger proportion is passed out with the urine. In this context, developers talk about "poor bio-availability".

In order to improve bio-availability, pharmaceutical formulators are trying to increase the dissolvability of pharmaceutical substances with poorly water-soluble active ingredients. "We are combining micronising technologies with our LBL-Technology," explains Christoph Dunmann, Project Director at Capsulution. Thanks to the enlarged surfaces, the stabilizing particles interact more easily with and dissolve more rapidly in the watery bodily fluids. The tenside-free formulations are extremely palatable. By decreasing the therapeutic dose, the danger of side-effects is further reduced.

"In the current study, we investigated the pharmaceutical kinetics of an extremely poor water-soluble model substance with a solubility of less than 40 mg per litre with oral administration in rats," continued Dunmann. Various nano-particle-based LBL formulations were tested, in which the poly-electrolytes applied as well as the number of layers varied. In comparison to the unformulated active ingredient, the bio-availability in all the LBL formulations was significantly increased.

Following the successful study on animals, Capsulution is setting course for rapid development. A second animal study on the oral bio-availability is already on the programme for the first half of this year. Also planned are the improvement in the formulation of nano-suspensions for intravenous administration and formulations for subcutaneous and intra muscular dosage with an additional depot effect. There is also work on a non-invasive method of bringing active ingredients into the eye.

Contact person

Capsulution NanoScience AG
Herr Dipl.-Kfm. Alexander Herrmann
E-Mail: alexander.herrmann@capsulution.com
Telefon: +49 (30) 6706919-129
Fax: +49 (30) 6706919-101
Chief Financial Officer (CFO)

About Capsulution NanoScience AG
Capsulution NanoScience AG is a leading company in the field of tailor-made drug-delivery systems and other innovative life science products on the basis of so-called nanocapsules. These nanocapsules are manufactured on the basis of the worldwide patent protected LBL Technology®. Due to their minute size and high level of functionality as well as their extremely reproducible manufacture, the capsules can be used in a diverse number of applications.

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