

Phosphorex Inc.

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Tailored solutions for optimized delivery

In recent years, it has become increasingly clear that many drugs are simply not optimized for clinical use. For example, conventional oral drug administration usually does not offer control over the rate of drug release or the ability to target specific tissues in the body. In addition, many drugs are poorly soluble and therefore are not effectively absorbed into the bloodstream. Because of these limitations, high doses are often required to achieve the desired therapeutic effect, increasing the risk of adverse outcomes in patients.

To address these problems, Phosphorex is harnessing the potential of microspheres and nanoparticles for enhanced drug delivery. The company, founded in 2005, has developed a full range of drug delivery solutions that can be customized for a variety of applications.

Leveraging its proprietary technologies, Phosphorex encapsulates drugs into microspheres or nanoparticles to enable controlled and sustained release, protection of the therapeutic agents from degradation, and targeted drug delivery. Moreover, the company has pioneered state-of-the-art techniques to improve the solubility of both new and existing drugs.

"We work closely with customers and collaborators to find the drug delivery solution that best fits their

needs," said Bin Wu, director of product and technology development at Phosphorex. "Our experts support clients through all stages of the development process, from formulation development to clinical trials."

Customization is key

Phosphorex has developed a comprehensive approach to optimize drug delivery for a variety of needs. For example, the drug-release profile can be precisely controlled through optimization of the chemical composition, molecular weight and surface properties of the microspheres and nanoparticles. The microsphere and nanoparticle surfaces can also be coated with different molecules to promote entry of the drugs into cells, increase the drugs' ability to target specific tissues and enable the therapeutic molecules to cross the blood-brain barrier.

To improve drug solubility, Phosphorex focuses on three platforms: nanosizing, solid dispersion and microemulsion. Reducing the size of an insoluble drug, dispersing it in a water-soluble polymer matrix or processing it into a microemulsion of oil and water can significantly enhance its absorption into the bloodstream.

Together, these tailored solutions can optimize a drug's solubility, release rate and targeting ability. As a result, lower doses are required to achieve the desired therapeutic effect, potentially reducing the risk of adverse effects in patients. Phosphorex has demonstrated the success of its approach for everything from vaccine development to the treatment of cancer.

"We are excited about the opportunities to assist our customers in the development and growth of new cutting-edge applications," Wu said. "Through these partnerships, we look forward to using our capabilities and expertise to propel research and development programs forward and optimize the clinical results of both new and existing drugs."

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