

Novel Drug Delivery Method for Sustained Release of anti-HIV Drug

A novel drug delivery platform that uses natural polymers to deliver anti-HIV drug Zidovudine in a slow and sustained manner in the body is developed by researchers at the Yogi Vemana University, Andhra Pradesh in their recent study.

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The organism that causes AIDS is a virus called HIV. In 2015, there were 2.1 million new HIV infections worldwide, adding up to a total of 36.7 million people living with HIV as per the UNAIDS 2016 report. To manage HIV infections, an antiviral drug Zidovudine is orally administered to AIDS patients. Treatment with this drug, however, causes side effects such as anemia and leucopenia because the drug is toxic to blood cells at high doses. Because of these side effects, many patients withdraw treatments midway that leads to poor patient compliance.

The present limitations of the anti-HIV drug Zidovudine demand new drug delivery platforms that cause targeted and sustained drug delivery in the body. Researchers at the Yogi Vemana University, Andhra Pradesh have synthesized new microbeads from two natural polymers, guar gum and sodium alginate that efficiently encapsulate anti-HIV drug Zidovudine. The microbeads also release the anti-HIV drug Zidovudine specifically in the colon or lower intestine because the process is pH- and temperature- dependent.

The scientist claim the novelty of their drug delivery beads by saying, “Effective novel dual responsive delivery carriers were developed from sodium alginate and modified guar gum”. They found that the microbeads released approximately 96% of the encapsulated anti-HIV drug Zidovudine in a slow and sustained manner for up to 34 hours.

After they are tested for safety and efficacy in humans in clinical trials, the novel drug delivery microbeads can help millions of patients worldwide who are suffering from AIDS.

Bhavya Khullar

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