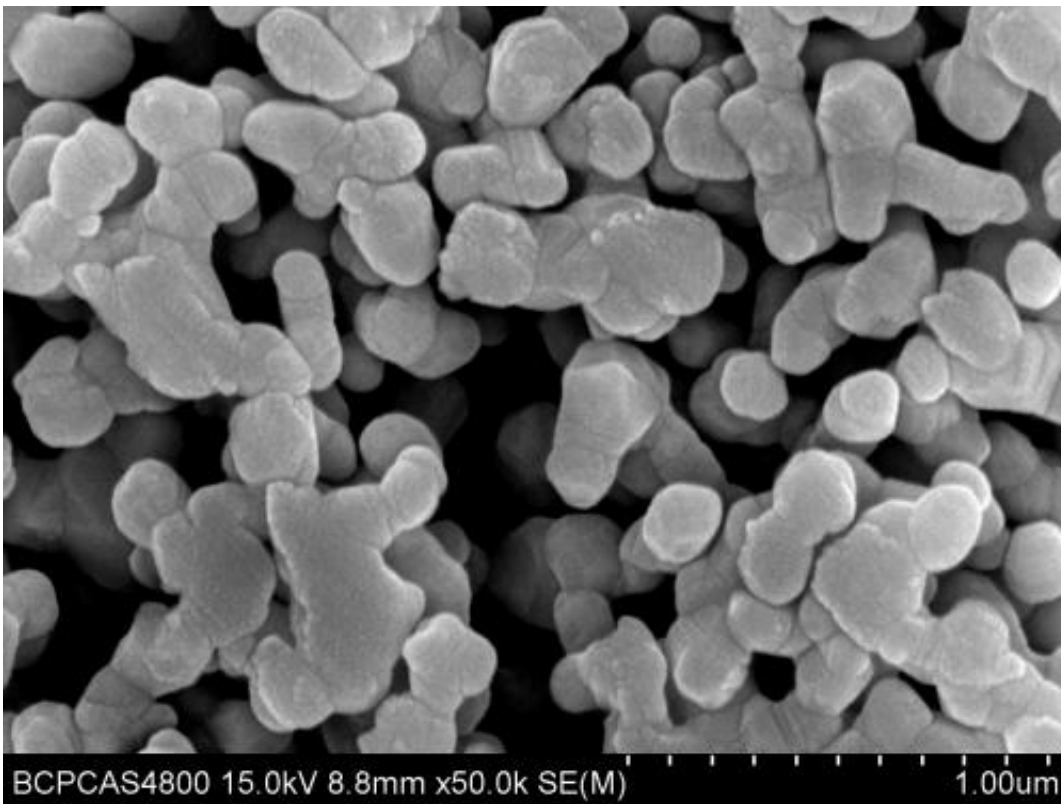


Using silver nanoparticles, researchers create cream that avoids the transmission of HIV

January 28 2014



Silver nanoparticles.

After discovering that silver nanoparticles are capable of blocking the entry of Human Immunodeficiency Virus (HIV) into the organism, a group of researchers from the University of Texas, in collaboration with Humberto Lara Villegas, specialist in nanoparticles and virology from the University of Monterrey, Mexico (UDEM), created a vaginal cream

to control the transmission of the virus.

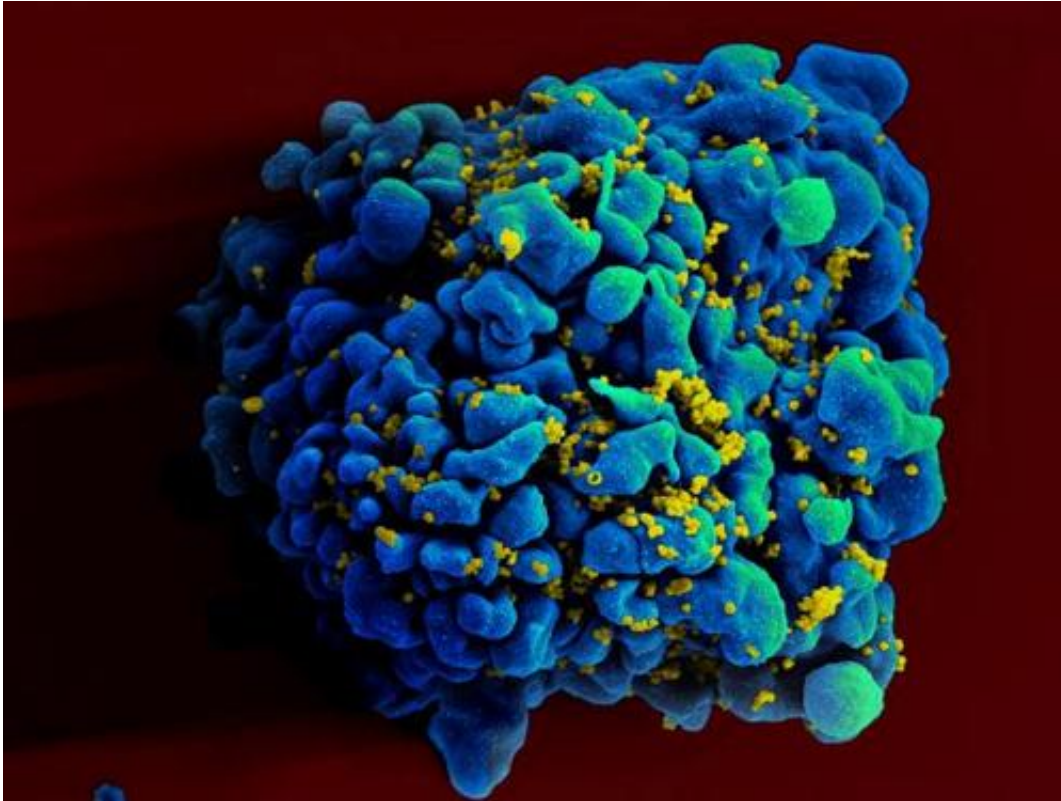
Lara Villegas explains that HIV makes its entry to [immune cells](#) (CD4) of the organism with the aid of a protein known as GP120, which allows the virus adherence to the cells. This same principle is used by [silver nanoparticles](#) to attach themselves to this protein and block it, turning the virus inactive.

The Mexican researcher says that the cream has been tested in samples of human tissue and has proven the efficiency of silver nanoparticles to avoid the transmission of the virus through cervical mucous membrane.

The researcher from UDEM, who has worked in Israel and The United States, says that after applied, the cream starts to work in less than a minute, and has an effective protection of up to 72 hours.

Given that the function of this product is the inactivation of the virus, although this is a vaginal cream, will also protect the sexual partner.

"Normally, the medication used against the virus acts within the cell to prevent its replication. This is a very different case, given that the nanoparticle goes directly against the HIV and no longer allows its entry to the cell."



Silver nanoparticles.

So far, no toxicity of the silver nanoparticles has been reported, although he adds that research has yet to be performed to evaluate the possible side effects of silver properties. "Right now, I am certain that this microbicide is going to prevent the virus entering the organism, but I cannot yet assure that is totally harmless, because the clinical trials are a long and expensive process," he says.

He adds that the use of gels is usually accompanied by irritation, which favors the entry of the [virus](#), which is why the cream was enriched with an anti-inflammatory.

Next, with the obtained results, researchers will perform experimentation in mice that accept human cells, with human [clinical](#)

[trials](#) later.

He says that this cream could prevent the transmission of other sexually acquired viruses like the Human Papilloma Virus (HPV). Additionally, he says that [silver](#) nanoparticles could be used to combat bacteria transmitted the same way.

He says that his research team is working on a diagnosis kit that predicts within hours, through blood tests, the resistance of a seropositive person to antiretroviral treatment, results that will help the physician to prescribe the most adequate treatment to patients with HIV.

"Currently, we have these results, but they are preliminary tests and we need to study a lot of seropositive patients to calibrate this kit," he concluded.

Provided by Investigación y Desarrollo

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