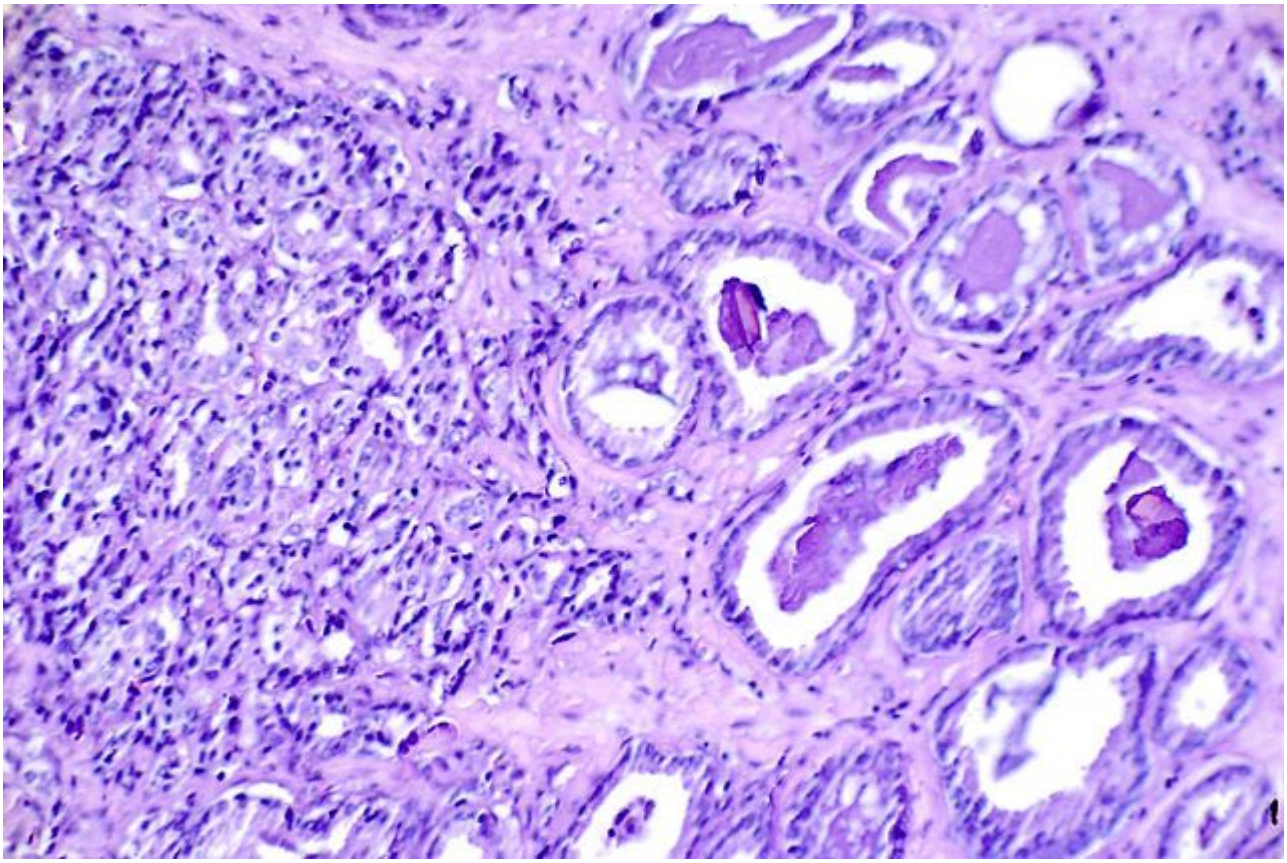
HEALTHY NEWS

Magnets Made by Soil Bacteria Hopeful for Treatment of Breast & Prostate Cancer

By bestfolkmedicine · 06/06/2022 · 3 min read



This team of scientists developed magnetically-directed microscopic projectiles that can be injected into the blood of patients and fight against cancer.

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The team from Sheffield University bases the finding on two crucial medical fields.

First, there are viruses that attack tumors. Second, there are soil bacteria that produce magnets that they use to align themselves in the magnetic field of the earth.

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Bugs as Drugs, Say the Sheffield Scientists

According to one of the leaders of the project, Dr. Munitta Muthana, they're using bugs as drugs. They take a class of viruses known to target tumors and came up with methods to help these viruses get to the internal tumors by making use of magnet-making bacteria.

This twin approach, Muthana added, is promising.

Oncolytic viruses are anti-cancer viruses that the Sheffield team is exploring.

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Their research is funded by Cancer Research UK.

These viruses happen naturally; however, they can also be modified if there's a need of improving their efficacy and lower the chances of them affecting the cells that are healthy.

After the infection with this virus, the cancerous cell will open up and die. The FDA has already approved the usage of T-Vec, a modified herpes simplex virus that infects and destroys cancerous cells.

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Now, this virus is being used for the treatment of certain types of melanoma, a type of skin cancer.

But, the Sheffield team, whose work has been awarded a Roger Griffin prize for the discovery of cancer drug, plan to expand the tumor list and enable more cancers to be treated in this way.

Their priorities are prostate and breast cancers.

How Do the Oncolytic Viruses & Magnets Work Together?

The issue is that the oncolytic viruses attract the immunity of the body and this is why only skin-deep tumors can be addressed in this manner before the viruses get blocked by the defenses of the cells.

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The solution that the team came up with is coating the virus in magnetic particles. These are placed into the blood from where they can be directed towards a tumor. This is done by putting magnets over the body of a patient before the immunity blocks the progress.

Muthana explains that this is like having a shield. The magnets will keep the virus safe and make sure it reaches the tumors. The magnet is placed over the tumor and it pulls the virus fast.

The diameter of an oncolytic virus is around 180 nanometers while the magnets have to be around 50 nanometers in size. These tiny magnets can be made in the lab; however, the team has found bacteria that do better in making them than any scientists could.

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Some soil bacteria species synthesize iron oxide nanoparticles known as magnetosomes. They serve like compasses that direct the microbes into the magnetic field of the Earth and optimize the conditions for their survival and growth.

The magnets made by them have an ideal shape and are suited to the microscopic packages the scientists require so that deep cancer can be targeted.

After developing the tech, the team is focused on making sure that they can produce enough supplies in order for clinical trials to start soon.

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The trials to this date have been done with animal models. They've been encouraging and the next steps for advancing this tech are being taken. The ultimate goal is, according to the team, to make it suitable for use in humans.

Sources:

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