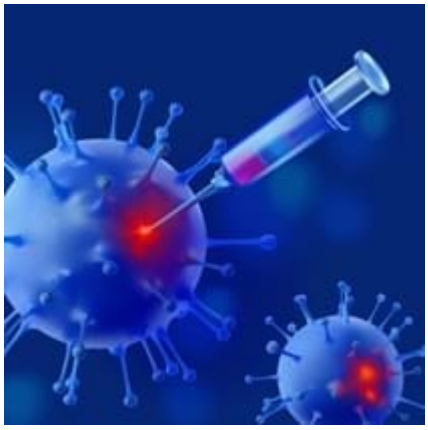
MEDICALNEWSTODAY

Therapeutic viruses and innovative ‘vaccines’



A surprising weapon in the fight against cancer could be therapeutic viruses, as revealed by a team from the United Kingdom earlier this year. In their experiments, they managed to use a reovirus to attack brain cancer cells while leaving healthy cells alone.

“This is the first time it has been shown that a therapeutic virus is able to pass through the brain-blood barrier,” explained the study authors, which “opens up the possibility [that] this type of immunotherapy could be used to treat more people with aggressive brain cancers.”

Another area for improvement in immunotherapy is “dendritic vaccines,” a strategy wherein dendritic cells (which play a key role in the body’s immune response) are collected from a person’s body, “armed” with tumor-specific antigens — which will teach them to “hunt” and destroy relevant cancer cells — and injected back into the body to boost the immune system.

In a new study, researchers in Switzerland identified a way to improve the action of these dendritic vaccines by creating artificial receptors able to recognize and “abduct” tiny vesicles that have been linked to cancer tumors’ spread in the body.

By attaching these artificial receptors to the dendritic cells in the “vaccines,” the therapeutic cells are enabled to recognize harmful cancer cells with more accuracy.

Importantly, recent studies have shown that immunotherapy may work best if delivered in tandem with chemotherapy — specifically, if the chemotherapy drugs are delivered first, and they are followed up with immunotherapy.

But this approach does have some pitfalls; it is difficult to control the effects of this combined method, so sometimes, healthy tissue may be attacked alongside cancer tumors.

However, scientists from two institutions in North Carolina have developed a substance that, once injected into the body, becomes gel-like: a “bioresponsive scaffold system.” The scaffold can hold both chemotherapy and immunotherapy drugs at once, releasing them systematically into primary tumors.

Adapted from MedicalNews Today
Written by Maria Cohut Ph.D. on March 2, 2018
Fact checked by Jasmin Collier