

# Humic Acid Research

It is only recently that scientific research has been performed on humic acid. It is a large, long-chain molecule that can be isolated in a relatively pure form from the soil's humate layer. Scientific studies have shown that it **impairs the attachment of the HIV-1 virus**, one of the viruses responsible for the development of AIDS. Herpes simplex virus infections have been found to be impeded.

Another study examined influenza viruses, including the swine flu, with the same results. Exotic viruses like the West Nile Virus, hemorrhagic fever and Coxsackie viruses have been found to be inhibited by humic acid. There is every reason to expect that its antiviral properties are broad spectrum, meaning it may have **usefulness against the Asian or bird flu pandemic**.

The mechanism of action of humic acid in these cases is believed to be the blockage of a virus particle from attaching to and entering a healthy cell. Viruses can't replicate or divide without entering and taking over the cell's DNA for the making of more virus particles. By keeping one virus particle from becoming thousands, it effectively blocks the infection from happening.

Humic acid has also been scientifically shown to be a free radical scavenger. Free radicals are "broken" molecules that are off-balanced from the standpoint of having too many electrons on them. They are dangerous to healthy, living cells. Free radicals can interfere with our DNA and the effect can be cancer-causing. By binding them up, humic acid makes free radicals safe from us.

**Humic acid is a potent chelator** as well. A chelator is a molecule that binds metals, including toxic heavy metals. It is able to scavenge for these heavy metals and eliminate them from the body. It seems to increase the permeability of cell walls, allowing for easier transfer of nutrient metals. Research indicates that humic acid can bind to essential metals as well; much like soil humic acid did millions of years ago it can provide nutrients to living things growing in the soil. It's felt that by binding to healthy metals, humic acid can aid in their absorption in the body.

## **Humic Acid blocking a virus particle from attaching and replicating in healthy cell.**

Humic acid also seems to modulate or regulate the effects of our stress hormones. Because of its size, it likely blocks the stress hormones from reaching the receptor site. Interestingly, a study out of Penn State found that rats with humic acid showed much lower levels of stress hormones than those that didn't.

Our immune system, too, reaps the benefits of humic acid. Humates can increase polysaccharide sugars in our body which bind to Killer T Cells (immune killer cells) and facilitate communication between the Killer T Cells and other body cells. The function of Killer T cells is then modulated by the polysaccharides. Excessive Killer T Cell function in the body is part of what facilitates auto-immune diseases like rheumatoid arthritis.

Humic acid has anti-inflammatory properties. While its full effect is not understood, it has been shown to diminish cervical inflammation in subjects with cervicitis.

**In the years before we depleted our growing soil**, humic acid was a natural part of the food chain. Without it, we're missing something that seems to have healthful benefits against viruses, heavy metal toxicity and dangerous free radicals.

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