

UPDATE

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TITLE Dextran Sulfate Suppression of Viruses in the Human Immunodeficiency Virus (HIV) Family: Inhibition of Virion Binding to CD+ T Cells.

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STOCKHOLM--The drug dextran sulfate blocks the binding of HIV to T cells and suppresses HIV replication in the test tube, according to a new study. The drug has been given orally to patients for a long time as an anticoagulant or cholesterol-reducing agent.

Hiroaki Mitsuya, M.D., of the U.S. National Cancer Institute (NCI) reported on the study today at the 4th International Conference on AIDS in Stockholm. The research was conducted by Dr. Mitsuya, Dr. Samuel Broder, and their colleagues at NCI, Bethesda, Md., in collaboration with scientists from Ueno Fine Chemicals Industry Ltd., Itami, Japan.

This antiviral activity against human immunodeficiency virus (HIV or HIV-1), the cause of AIDS, is potentiated at least in the test tube by

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pairing dextran sulfate with each of three agents active against the AIDS virus: AZT, dideoxycytidine, and dideoxyadenosine.

The drug is considered a possible candidate AIDS therapy and may provide a new strategy for treating AIDS patients. An initial clinical trial of dextran sulfate in patients with AIDS is now being conducted at San Francisco General Hospital.

Dextran sulfate inhibits HIV infection perhaps by binding to the site on the normal T cell, a primary target for HIV infection, where HIV binds in order to infect the cell, Dr. Mitsuya said. The binding site is called the CD4 receptor, but the precise mechanism of antiviral effect might be complex. In addition, dextran sulfate prevents HIV-infected T cells from fusing with normal T cells (another way in which HIV causes infection) by locking onto the CD4 receptor of the normal T cell and blocking HIV, he said. These antiviral characteristics of the drug were reported recently by Dr. Mitsuya and colleagues in Science.*

The drug also suppresses the replication of a human virus called HIV-2 that is related to HIV-1 and also causes an AIDS-like disease.

*Mitsuya H, Looney DJ, Kuno S et al: Dextran sulfate suppression of viruses in the HIV family: Inhibition of virion binding to CD4+ cells. Science 240:646-649, 1988.