Bee Venom: The Next Anti-HIV Agent? A Proof-of-Concept Study Says Yes

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Nanoparticles filled with a toxin called melittin that's found in bee venom can destroy HIV and have a benign effect on surrounding cells, Medical News Today reports. Publishing the results of their proof-of-concept study in the March 2013 issue of Antiviral Therapy, researchers from Washington University School of Medicine in St. Louis added "protective bumpers" to the surface of the melittin-filled nanoparticles. These bumpers prevented normal cells, which are most often larger, from coming into contact with the melittin-coated surface. HIV, on the other hand, would fit in between these bumpers and the melittin would fuse with its viral envelope, rupture the envelope and tear it from the virus—effectively killing the virus.

This line of attack is different from the one taken by antiretrovirals (ARVs), which arrest different phases in the virus's lifecycle instead of killing it entirely. Such a novel approach would be able to keep HIV from beginning an infection of a cell in the first place. Researchers hope melittin may be used as a vaginal microbicide or as a salvage therapy for people with HIV who have failed numerous classes of ARVs. In addition, because melittin attacks cells indiscriminately, it may prove an effective therapy for hepatitis B and C viruses (HBV/HCV) and other pathogens that count on a viral envelope for survival.

To read the study abstract, click here.

To read the Medical News Today report, click here.