Not Your Typical Tearjerker

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Cry me a river—right into the drug pipeline. New test-tube studies show that tears, as well as saliva and pregnant women's urine, contain an enzyme called lysozyme that rapidly destroys HIV. Also awash in these fluids are proteins called ribonucleases, which contribute to the viral destruction. Scientists guess that lysozymes attack the virus' outer membrane, preventing it from invading immune cells, while ribonucleases are thought to undo viral genes. The kinky-minded might imagine that water sports led some doc to stumble upon these agents, but in fact it was all very scientific: The search was on when scientists began wondering why some babies of women with HIV are born uninfected. Although a hormone produced during pregnancy, human chorionic gonadotropin (HCG), was originally thought to do the trick, New York University School of Medicine researchers found that purified HCG had no anti-HIV effect. Instead, they identified lysozyme and ribonucleases as the virus vanquishers. NYU's Sylvia Lee-Huang, PhD, speculates that these proteins are pregnancy-produced precisely to protect the baby against bacteria and viruses. She also posits that the lysozyme in saliva may help prevent the transmission of HIV while locking lips—just as in tears it protects the eye from infections.

Lee-Huang hopes for great things from these preliminary findings. She says, "These substances are very promising as antiretrovirals and should cause few side effects since they occur naturally in the body." But others caution that protein-based therapies can be problematic since they may cause serious reactions when introduced artificially. Clearly this discovery is crying for further study.

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