Antiviral activity of 5-Hydroxytyrosol, a microbicide candidate

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Introduction
5-Hydroxytyrosol (5-HT) is a natural compound that has previously shown biochemical activity against HIV integrase and gp41 (1,2). In this work we show that 5-HT is able to diminish viral replication without toxic effects in vitro.

Materials and methods
Recombinant viruses carrying luciferase-renaline reporters (Figure 2) with different properties (R5 type RAL and X4 type HIV, VSV pseudotyped HIV or resistant HIV clones) were used to infect a cell line (MT-2) or primary lymphocytes (PBMCs). Different concentrations of 5-HT were used in each assay to determine its potency and toxicity (3).

Results
5-HT inhibited X4 and R5 tropic HIV infections in both MT-2 cells and primary lymphocytes (PBMCs) with IC₅₀ values between 30 and 60 µM.

Conclusions
5-HT anti-HIV activity is similar in both infections, wild type HIV (NL4.3-Renilla) and resistant HIV (NL4.3-RAL). Gag-Pol-Nef resistance of MT-2 cells was obtained with different properties (R5 type RAL resistant HIV-1 were obtained using the MT-2 cell line without MT-2 resistant HIV-1 were obtained by site-directed mutagenesis). Lastly, an ideal microbicide would be composed by at least two different drugs. Since Tenofovir (TFV) is the only drug with positive results in clinical assays, combinations of TFV with 5-HT were evaluated.

Literature cited

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