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Anti-rhinovirus activity of ethyl 4-(3-(2-(3-methylisoxazol-5-yl) ethoxy) propoxy) benzoate (EMEB)

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The compound EMEB has got a definite anti-rhinovirus activity on both HRV14 (group A) and HRV39 (group B). The specific activity is lower than that found for pirodavis used as a positive control, but, since the cytotoxic activity of EMEB on human HeLa cells is more favourable than that of pirodavis (50 µg/ml against 3 µg/ml), the final protection index is higher for EMEB (>700) as compared to pirodavis (250). EMEB seems to be stable in aqueous solutions, since its activity after 10 days was unchanged. When EMEB is challenged with Rhinovirus infected HeLa cells during the whole reproduction cycle, its antiviral activity remains evident and strong even after 18 hours from infection. This fact is important because it means that the compound keeps functioning even when the viral infection is already in progress; this finding makes us to hypothesize that the compound EMEB could act not only as a prophylactic agent against the common cold, but also as a therapeutic drug in patients who already show the disease symptoms (at least within the first 24 hours from the start of symptoms). These last statements must be confirmed with assays on the mechanism of action of the compound, by analyzing its adhesion to the cell virus internalization into the cells, the viral uncoating, transcription and translation, and finally on viral morphogenesis.

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