

عنوان مقاله:

A novel medium-throughput biological assay system for HTLV-1 infectivity and drug discovery

محل انتشار:

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خلاصه مقاله:

Objective(s): Here, a reporter cell line containing two reporter vectors were developed, in order to monitor the Human T-Lymphotropic Virus type 1 (HTLV-1) infectivity and the cell viability simultaneously. **Materials and Methods:** The reporter cell line was constructed by stably transfected baby hamster's kidney cell line (BHK-21), with the genomes expressing two different reporters in separate plasmids. The first reporter gene is transactivated by the HTLV-1 tax protein, while the second reporter is continuously expressed when introduced into a mammalian cell. In order to show its functionality, the effect of the drug mix on HTLV-1 was assayed by this system and was compared to the results obtained by other methods. **Results:** HTLV-1 reporter cell line was found to produce high level of luciferase when co-cultured with MT-2 and Hut-102 cells but not with Jurkat cell. Moreover, the combination therapy against HTLV-1 can reduce luciferase expression of the cell when co-cultured with MT-2 and Hut-102 comparable to the ELISA ($R=0.932$, $P\text{-value}=0.002$). In addition, the results revealed the superiority of the present system over the molecular methods. **Conclusion:** The results demonstrated that the biological assay system is a beneficial tool for the medium-throughput anti-HTLV-1 drug screening and inhibitory effect.

کلمات کلیدی:

Biological Assay, Drug screening, HTLV-1, Hut102, Luciferase, Reporter gene

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