عنوان مقاله:

Evaluation of a 133 Natural Products Library on Herpes Simplex Virus type 1 Replication

محل انتشار:

سیزدهمین کنگره بین المللی میکروب شناسی بالینی استاد البرزی (سال: 1398)

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خلاصه مقاله:

Background and objectives: Herpes simplex virus type 1 (HSV-1) is responsible for a wide range of human diseases from skin lesions to encephalitis. Discovery of novel anti-HSV-1 drugs with high effectiveness and low toxicity is required as combined or alternative therapy with Acyclovir, especially in immune-compromised patients. Natural products are an important source of new molecules that have been a valuable source of medical therapeutic agents, and many of today s drugs and medications are natural products-derived. Therefore, antiviral drugs with new different antiviral actions, antiviral targets, and antiviral mechanisms are required. The present study aimed to investigate potential anti-herpes simplex virus activity of a natural product library by screening methods based on the reduction of HSV CPE titer and plaque counts.Materials and Methods: A 133 natural products library were purchased from Selleckchem Company. Antiviral properties of natural products on HSV-1 were evaluated by titration based with the modified TCID50% method by using A549 cell line, so that compounds with greater than 80% inhibition, compared with controls, were selected as primary hit. Primary hits were detailed evaluated by plaque reduction assay for confirmation. Results: HSV-1 isolated from oro-labial of a 56 year old male was confirmed and characterized by real-time PCR and sequencing. 133 NPs were screened for anti-HSV activity in double dose at 5 and 30 μM/ml using a cell-based CPE assay in a 96-well plate format. Three primary hits were selected with a cut-off of 80% CPE inhibition. Two compounds including Triptolide and (S)-10-Hydroxycamptothecin were obtained with higher percent of plaque reduction in 1 μM/ml. Conclusion: in this study, we identified Triptolide and (S)-10-Hydroxycamptothecin as effective inhibitors of HSV-1 infection in very low concentrations from screening of a natural product library. We need to study more about these selective natural products, so that we can suggest them as novel anti-HSV-1 drugs with low toxicity for public health promotion.

کلمات کلیدی: