Research in Pharmaceutical Sciences, 2012;7(5)
School of Pharmacy and Pharmaceutical Sciences
Isfahan University of Medical Sciences

Construction of pseudotyped human immunodeficiency virus for evaluation of anti-HIV drugs

E. Mohammadi*, M. Behbahani

Biotechnology Department, Faculty of Advanced Sciences and Technologies, University of Isfahan, Isfahan, Iran

Background and Aims: Human immunodeficiency virus (HIV) is a member of lentivirus genuse and it belongs to retroviride family. This virus infects CD4-expressing T lymphocytes and it causes acquired immunodeficiency syndrome (AIDS). Resistance to HIV treatment has led to continued efforts to find new compounds with anti-HIV effect. The present investigation was carried out to construction of a HIV pseudotyped in order to test of new anti-HIV compounds.
Methods: In this project three vectors including pWPXL-GFP , psPAX2 (consist of gag, pol gene) and pMD2.G (Envelope vector) were used. These vectors co-transfected to HEK293T cells by Calcium phosphate method . Produced viruses was Trasnsduced on new HEK293T cells line.
Results: green fluorescent protein (GFP) gene is expressed in infected cells so detection of it by fluorescent microscopy and flow cytometry technique is evaluated and construction of pseudotyped HIV are confirmed.
Conclusions: research on the wild type HIV are needed to levels 3 & 4 labs and there are many problems to set up these labs .Pseudotype viruses or viral vectors were designed to exhibit essential properties of the parental virus these are safe and non exposure to the wild-type virus during the pilot screening process(replication incompetent in host), so these are suitable means for evaluation of anti retroviral drugs.

Keywords: HIV; Pseudotyped virus; Antiretroviral drug