

Development of a New Solid Phase for Simultaneous Detection of Antibodies in Human Serum

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Abstract

Objectives: To develop a two-antigenic ELISA for combined screening for HIV-1 and HCV. High rate of HCV/HIV co-infection rate have become a global concern in recent years. Likewise, in Iran due to Injection Drug Use (IDU), the dominant transmission pattern, this rate is increasingly on the rise standing at approximately 70 percent. To reduce screening costs, an ELISA with a new solid phase system for simultaneous detection of HCV and HIV-1 infections was explored. **Study Design and Methods:** Sera samples from patients infected with HIV-1, HCV, and negative controls were tested. In the new ELISA, wells were primarily coated with Streptavidin overnight followed by blocking with bovine serum albumin. Then biotinylated gp 41 (HIV-1 antigens) and recombinant core and NS4 antigens (HCV antigens) were added to wells either separately or simultaneously. Then, the alkaline phosphatase (AP)-conjugated anti-human IgG secondary antibodies and para-nitro phenyl phosphate (pNPP) substrates were added to wells followed by reading ODs at 450 nm. **Results:** Both single and combined assays showed high diagnostic sensitivity and specificity of about 99 percent and 97 percent respectively. **Conclusions:** Due to differences in physicochemical properties, antigens require various coating conditions. However, by using this method, multi antigens could be coated on a well surface to obtain an efficient, inexpensive and accurate detection.



Biography:

Mahshid has completed MD in Medical Biotechnology from Iran University of Medical Sciences, International Campus. She is currently working as a Research Associate in Department of Medical Biotechnology Faculty of Allied Medicine.

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