TOOL DESIGN TO FAST SCREENING INTERACTION OF HIV-1 GP41 CORE TO EVALUATE NEW ENTRY INHIBITORS

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HIV infection is an infection caused by the human immunodeficiency virus (HIV), which is gradually able to cause the destruction of the immune system, allowing opportunistic infections or different types of cancer to attack the organism. The structure of the virus has an envelope (env), whose composition mainly consists of a plasma membrane for the target cell. However, the fusion and entry is exclusively driven by a complex of viral glycoproteins localized on the viral envelope. This complex contains the two subunits associated in trimers by non-covalent association, a superficial protein, gp120, and a transmembrane unit, named gp41. Only a trimer complex gp120 / gp41 is enough for the virus to enter into the cell and thus this is an interesting target to search for new drugs. In this work, we show the construction and evaluation of a chip for use in a surface plasmon resonance system (SPR) that allows to determine the possible interaction between fusion inhibitors in liquid phase over chemoselectively immobilized N-terminal peptide gp41 on a gold surface. This methodology allowed us to evaluate the affinity of several earlier peptide ligands designed in our group and verify their action as inhibitors.

The immobilization strategy would be extrapolated to other evaluation techniques of protein ligand interactions which will be evaluated in the future.

Keywords: binding sensor, surface plasmon resonance, HIV entry inhibitors discovery

References:


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