Title: Dendritic cell immunoreceptor (DCIR) inhibitors to prevent the binding of the human immunodeficiency virus type 1 (HIV-1)

Activity sector: Healthcare, pharmacology, HIV-AIDS

Inventor(s): Caroline Gilbert et al., Axe maladies infectieuses et immunitaires, Centre de recherche du CHU de Québec-Université Laval

Markets: HIV infection prevention and AIDS therapy, and immunomodulation

Unmet need(s): Early intervention or pre-exposure prophylaxis can prevent the irreversible damage inflicted on key immune cells following infection by HIV-1

New treatments with novel mechanisms of action

Solutions: Novel inhibitors of the dendritic cell immunoreceptor (DCIR)

Description: During primary infection, dendritic cells (DCs) are the first immune cells to interact with HIV-1 via DCIR, to subsequently establish contact and communicate with (virus reservoir) cells of the immune system. After internalization of HIV-1, DCs migrate to secondary lymphoid organs where the virus is transferred to CD4+ T lymphocytes. Molecular models of the extracellular domain of DCIR have enabled the virtual docking of potential ligands which could become inhibitors of HIV-1 attachment to DCs and transmission to reservoir cells, thus a new class of anti-HIV drugs.

Strengths: DCIR inhibitor molecules may provide new therapeutic strategies against HIV-1, but also against tuberculosis, malaria, autoimmune disease, and asthma

Opportunity: SOVAR and Université Laval seek a partner for chemical derivation, co-development of lead candidate(s), licensing, or commercialization of this technology
