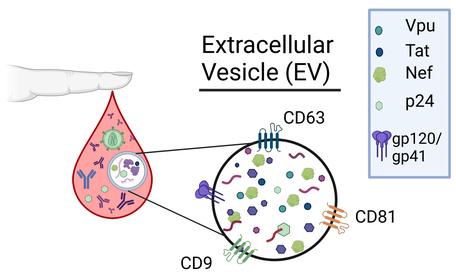
We harness **cell-to-cell communication** to create new diagnostics for **human diseases.**

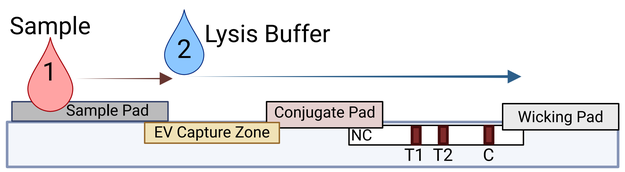
Benefits of Screening for EVs:

- Cell-derived membrane-bound vesicles that carry proteins, lipids, and nucleic acids
- Transmembrane proteins called tetraspanins are enriched in EV membranes
- HIgly abundant in body fluids
- EVs from diverse origins can be tested from the same sample
- Antigens from cancer cells, viruses, bacteria, parasites, etc are active cargo in EVs
- Utilize EVs properties to enrich and test for antigens

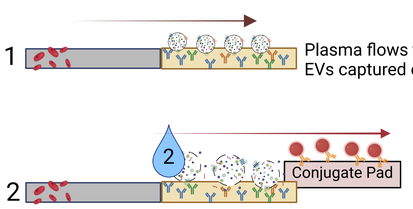
How It Works:



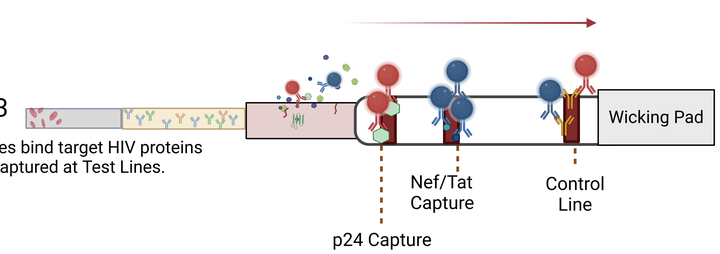
In HIV infected patients, HIV proteins/antigens are sequestered from anti-HIV antibodies inside tetraspanin-enriched EVs and viruses



Step 1 Plasma flows to EV Capture Zone, RBC remain. EVs captured on anti-CD63, anti-CD-81



Step 2 Lysis buffer perforates EV membrane, cargo proteins flow to Conjugate Pad



Conjugates bind target HIV proteins and are captured at Test Lines.

INTUITIVE DX

Using Extracellular Vesicles (EVs) for Disease Screening

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Madison WI 53717 USA

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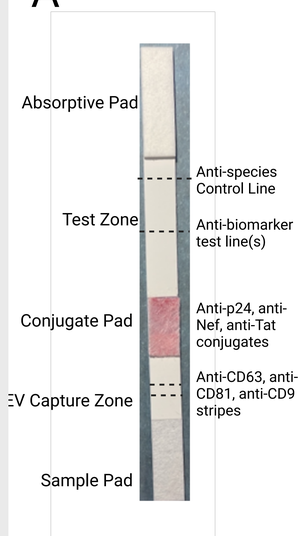
A



B

EV-based Diagnostic Test: Exosome Capture and Target Detection

A. Image of prototype two-phase lateral flow test without external cartridge. Liquid sample is added to Sample Pad, which selectively captures red blood cells. EVs flow with plasma across the EV capture zone. Addition of lysis buffer to the EV capture zone promotes lysis of the EVs allowing cargo proteins to flow through the conjugate pad and interact with detection antibodies. The antigen-antibody complexes are captured in the Test Zone. **B.** User workflow. Liquid sample is added and allowed to flow. Following a brief period, lysis buffer is added and signal allowed to develop for 15 minutes. Results are read by visual observation of lines in the Test and Control zones.

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