Laboratory Diagnosis of HIV

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HIV testing @ SydPath

1) Architect 4th generation chemiluminescence assay
   • Detects p24 Ag and Ab to HIV-1 and HIV-2
2) (if +) Genscreen
   • Detects Ab to HIV-1 and HIV-2
3) (if +) p24 ELISA & HIV Western Blot

Evolution of HIV Western Blot

- Highly Specific
- Less Sensitive
- Expensive $$$
- Results may be:
  - POSITIVE
  - NEGATIVE
  - INDETERMINATE

Evolution: antibody/antigen testing response

- Detection of HIV-1 proviral DNA by PCR can provide early evidence of HIV-1 infection (approximately 10-14 days after infection), when results of routine diagnostic assays are inconclusive.
- The linear cDNA transcribed prior to integration is the “proviral” DNA.
The role of proviral DNA tests

- HIV-1 proviral DNA can be detected by a PCR that targets a segment of the highly conserved HIV-1 gag gene or LTR region. Clinical studies have indicated this is highly sensitive (>95%) and specific (>98%).
- Currently SydPATH is the only site licensed in Australia for this test.
- The limit of detection is 10 copies/μL.
- Research assays can detect 0.3 copies/μL.

HIV Monitoring and management tests

- CD4 count and percentage
- HIV VL
- Viral genotype
- Viral resistance
- Viral tropism
- HLA B57