



NYS Cattle Health Assurance Program
Bovine Leukosis Module
Detecting BLV Infection – Tests Available



Antibody detection

1. Agar gel immunodiffusion (AGID) test. Low cost, simple, reproducible
2. Enzyme-linked immunosorbent assay (ELISA) test. Analytical sensitivity is greater than AGID test; will test positive when cows are pooling colostrum. Sensitive enough for pooled sera testing. May be able to offer this test on individual milk samples. This site will be updated if routine milk testing becomes available.
3. Complement Fixation (CF) test. AGID is a slightly more sensitive test with less reliability problems.
4. Radio-immunoassay (RIA) test. Primarily a research tool.
5. Virus neutralization (VN) test. Primarily a research tool.
6. Western Blot test. Primarily a research tool.

Antigen detection – Useful and highly sensitive and specific, but not routinely used in diagnosis, because they are not as easy to perform on the large numbers of samples that laboratories see for commercial testing.

1. Immunofluorescence tests.
2. Immunoperoxidase assay.

Tumor-associated Antigen

1. ELISA test – research tool not widely available, but may be fairly good at confirming lymphosarcoma in sick cows.

Virus detection – These are primarily research tools.

1. Virus isolation.
2. Electron microscopy to visualize virus particles.

DNA (nucleic acid) detection

1. Polymerase Chain Reaction (PCR) test. These tests can be highly sensitive, but there is variability based on methodology. Best test for recently infected animals with undetectable antibody levels. Not yet widely available. More expensive.

The ELISA test is the test of choice performed by the NYS Animal Health Diagnostic Laboratory at Cornell. The AGID test is performed where required for export purposes. Cattle that test positive, by any test method, is persistently infected, unless young enough to still have maternal antibodies. Animals exposed to the virus, and developing antibodies, but not being infected, have not been demonstrated.