

## **Murine Norovirus – 1 (MNV-1)**

**Agent, Species:** Murine Norovirus is a recently discovered non-enveloped RNA virus. MNV-1 is the first norovirus found in mice.

**Host:** Mouse

**Transmission:** Not determined

**Clinical signs:** Experimental inoculation studies revealed that disease manifestations associated with MNV infection vary depending on the mouse strain:

- Immunodeficient (RAG/STAT<sup>-/-</sup>) mice showed high mortality with concomitant encephalitis, meningitis, vasculitis, pneumonia and hepatitis.
- RAG<sup>-/-</sup> mice exhibited low mortality but remained persistently infected.
- Immunocompetent mice seroconverted but were only transiently infected with the virus.
- Mice lacking interferon  $\alpha\beta$  and interferon  $\gamma$  receptors were 10,000-fold more susceptible than immunocompetent mice.

**Diagnosis:** ELISA, IFA, PCR and Western Blot

**Research complication:** Refer to clinical signs

**Prevention and treatment:** Strict quarantine, PPE and disposing and cleaning materials used in animal rooms

\*Currently DLAR has not started testing rodent colonies for this virus as it is a recently discovered virus. Testing paradigms are being developed. Commercial diagnostics are also being refined.

\*The high seroprevalence (Based on preliminary unpublished data from RADIL) without an equivalent level of visible effect suggests that MNV-1 is well adapted to its mouse host. Testing data also suggest MNV is present in most research institutes.

As shown on the reference, except in the most severely immunodeficient mice, MNV-1 infection are transient and are believed to be non-pathogenic.

## **References**

Stephanie M. Karst, Christiane E. Wobus, Margarita Lay, John Davidson, Herbert W. Virgin IV., *Science*, Vol 299, Issue 5612, 1575-1578 , March 2003.

<http://www.radil.missouri.edu/info/MNVinfo.asp>

[http://www.taconic.com/healthr/MNV\\_testing.htm](http://www.taconic.com/healthr/MNV_testing.htm)