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A small animal model for mother-to-fetus transmission of ts1, a murine retrovirus.

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Infection with a murine retrovirus, MoMuLV-TB, ts1 in BALB/c mice has been established as a small animal model for retroviral neurodegenerative disease as shown with infections such as HIV. However, mother-to-pup transmission has never been demonstrated in this model. The current investigation examines vertical transmission of ts1 in this mouse model. A total of 15 females were used to produce 59 pups (16 were used for control, and 43 were used as experimental animals). For experiment 1, 24 5-day-old mice were injected with [0.2 mL of 2.0×10^6 ffu/mL ts1] virus. For experiment 2, 19 48-h-old mice were injected with [0.1 mL of 4×10^6 ffu/mL ts1] virus. Control groups were injected with DMEM only. PCR and electron microscopy were performed to determine the presence of virus. All mice from experiment 1 injected with ts1 showed viral infection, and retained 100% reproductive capacity. Three out of 102 pups produced by these infected females were infected with ts1. Nine percent of the pups from experiment 2 injected with ts1 retained normal reproductive capacity, and two out of eight (25%) pups had viral infection. Vertical transmission of this unique retrovirus occurs and is dependent, in part, on the timing of maternal infection.

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