**Supplemental Figure S1. Treatment schedules.** A, Schedule of administration using MG1 virotherapy for treatment of established L1210 leukemia in DBA/2 mice. B, Immunization schedule for iLOV and other vaccine preparations for use in DBA/2, C57BL/6, B6D2F1 and athymic nude mice. In certain experiments leukemic challenge preceded iLOV treatment, wherein the weekly x 3 immunization series was initiated on Day 1.

**Supplemental Figure S2. Cytopathic effect induced by rhabdovirus infection.** Murine and human acute leukemia cells following infection with rhabdovirus, versus uninfected acute leukemia cells at 24 hours. Rhabdovirus-infected leukemic blasts typically display the morphological features of disrupted cell membranes, reduced cell diameter, apoptotic bodies, fragmented nuclear content and cellular debris. Shown are representative images (20X) of murine (L1210) and human (A.301) leukemia blasts.

**Supplemental Figure S3. iLOV efficacy using VSVd51 virus.** Survival following injection of 1 x 10^6 L1210 leukemia cells as a challenge for the development of anti-leukemia immunity in naive or VSVd51-iLOV immunized DBA/2 mice (n = 10 each group), P < 0.0001.

**Supplemental Figure S4. Efficacy of EL4-based iLOV.** Survival following injection of 1 x 10^6 EL4 leukemia cells as a challenge for the development of anti-leukemia immunity in unimmunized or EL4-based iLOV immunized C57BL/6 mice (n = 10 each group), P = 0.0003.
**Supplemental Figure S5. iLOV induces leukemia-specific immunity.** Cohorts (n=5 each group) of C57BL/6 and DBA/2 mice were immunized once weekly x 3, with either iLOV prepared with L1210 cells or EL4 cells. To control for immune recognition of leukemia cells based on the MHC disparity alone, cohorts of each breed were immunized with gamma-irradiated L1210 or EL4 cells alone. Each breed was challenged with syngeneic leukemia cells 1 week following the last immunization. DBA/2 mice were only protected by L1210-iLOV and C57BL/6 mice were only protected EL4-iLOV immunization.

**Supplemental Figure S6. Activated L1210 cells.** Expression of B-cell activation markers on L1210 cells following 18-hour incubation with TLR agonists or MG1-infection. Percentage of cells expressing A, CD40 (* P<10^{-7}) and B, CD252 (* P<0.002, ** P<0.02). Cell-surface expression density as mean fluorescence intensity (MFI) of C, CD40 (* P<0.0007, ** P<10^{-5}, *** P<0.0002) and D, CD252 (* NS, ** P <0.05). Measurements performed in triplicate.

**Supplemental Figure S7. UV-treated apoptotic and pressure-disrupted necrotic L1210 cells used for specific vaccine preparations.** Shown are representative flow cytometry dot plots of L1210 cells stained with Annexin V-APC versus 7-AAD cell viability dye. A, UVC-induced early apoptosis (Annexin V-APC +) and late apoptosis (Annexin V-APC+ and 7-AAD+) observed in L1210 cells 4 hours after UVC treatment. B, Pressure disruption of L1210 cells (1500 PSI) reliably produces necrosis as indicated by 7-AAD+ events.