

Supplementary Materials: Spinal Cord Ventral Horns and Lymphoid Organ Involvement in Powassan Virus Infection in a Mouse Model

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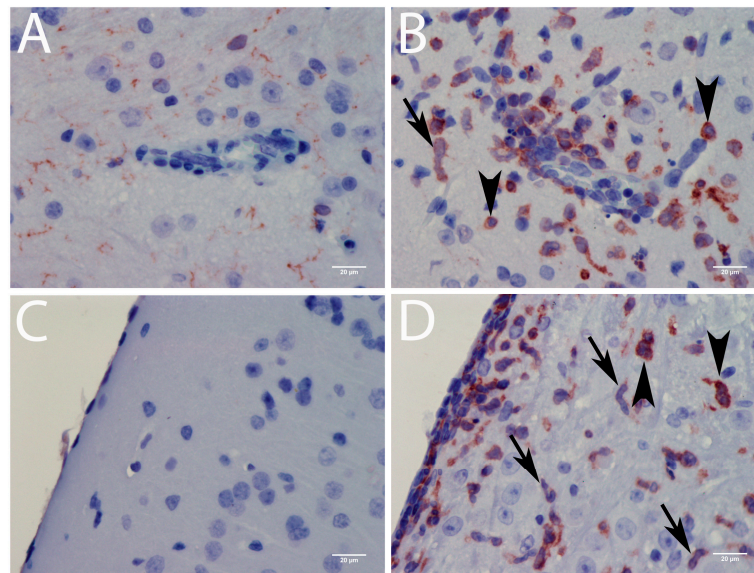


Figure S1. Immunohistochemistry for CD11b detection in the Brain. A) Control animal: vessel; B) POWV infected animal: perivascular infiltration; C) Control animal: meninges D) POWV-infected animal: meningitis. Scale bar correspond to 20μm (400X magnification). Arrows indicate microglial cells (rodcells), arrowheads indicate inflammatory macrophages.

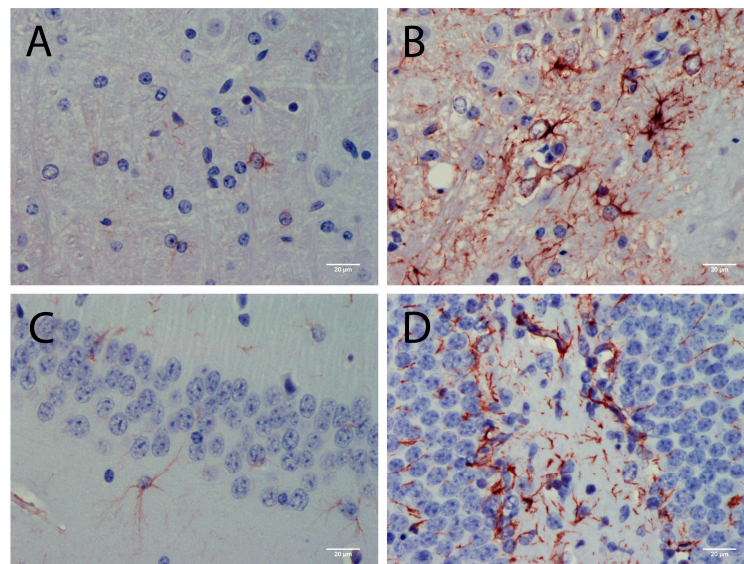


Figure S2. Immunohistochemistry for GFAP detection in brain sections. A) Control animal; normal GFAP staining for brainstem ; B) POWV infected animal: GFAP super-expression demonstrating astrogliosis in the brainstem; C) Control animal: normal GFAP staining for the hippocampus . D) POWV infected animal: GFAP super-expression demonstrating astrogliosis in the hippocampus. Scale bars correspond to 20μm (400X magnification).

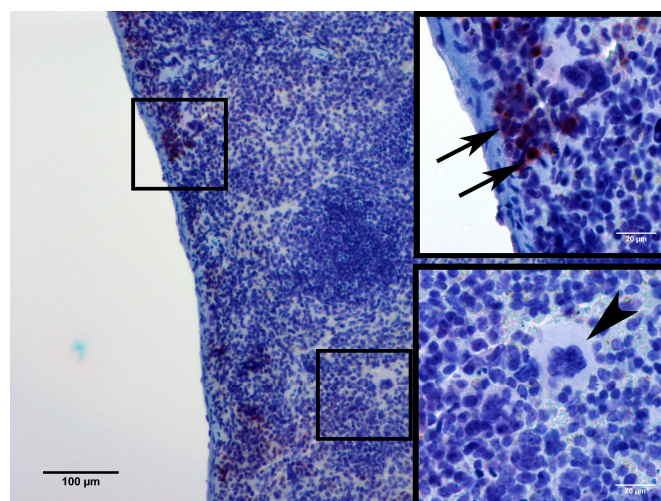


Figure S3. Immunohistochemistry for CD11b detection in infected spleen section. Arrows indicate CD11b-positive staining. Arrowhead indicates one giant cell; Note that giant cells are not stained for CD11b.

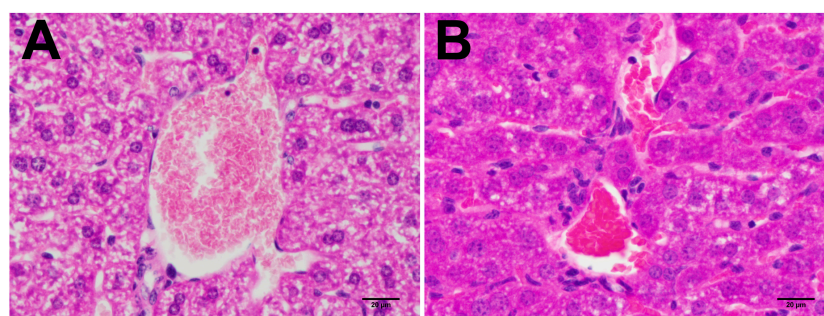






Figure S4. Histopathological findings in the liver (HE staining). A) Control animal; B) POWV-infected animal. Scale bars correspond to 20 µm (400X magnification).

Table S1. Summary of POWV pathological observations

| | | Control | Low dose infection | | | | | | | | | | High dose infection | | | | | | | | | |
|---------------|-----------------|------------------|--------------------|--|--|--|---|--|--|--|--|---|---------------------|--|--|--|--|--|---|--|--|--|
| POWV staining | Cerebellum | Purkinje cells | | | | | | | | | | | * | | | | | | | | | |
| | | Granular | | | | | * | | | | | | | | | | | | * | | | |
| | | Molecular | | | | | | | | | | | | | | | | | | | | |
| | Brainstem | | | | | | | | | | | * | | | | | | | | | | |
| | Hippocampus | CA1-4 | | | | | | | | | | | | | | | | | | | | |
| | | Dorsal Ganglia | | | | | | | | | | | | | | | | | * | | | |
| | Thalamus | | | | | | | | | | | * | | | | | | | | | | |
| | Midbrain | | | | | | | | | | | | | | | | | | | | | |
| | Neocortex | Caudal | | | | | | | | | | | * | | | | | | | | | |
| | | Medial | | | | | | | | | | | | | | | | | | | | |
| | | Frontal/piriform | | | | | | | | | | | | | | | | | | | | |
| | Basal Ganglia | | | | | | | | | | | | | | | | | | | | | |
| | Corpus callosum | | | | | | * | | | | | | | | | | | | | | | |
| Inflammation | Cerebellum | Purkinje cells | | | | | | | | | | | | | | | | | | | | |
| | | Granular | | | | | | | | | | | | | | | | | | | | |
| | | Molecular | | | | | | | | | | | | | | | | | | | | |
| | Brainstem | | | | | | | | | | | | | | | | | | | | | |
| | Hippocampus | CA1-4 | | | | | | | | | | | | | | | | | | | | |
| | | Dorsal Ganglia | | | | | | | | | | | | | | | | | | | | |
| | Thalamus | | | | | | | | | | | | | | | | | | | | | |
| | Midbrain | | | | | | | | | | | | | | | | | | | | | |
| | Neocortex | Caudal | | | | | | | | | | | | | | | | | | | | |
| | | Medial | | | | | | | | | | | | | | | | | | | | |
| | | Frontal/piriform | | | | | | | | | | | | | | | | | | | | |
| | Basal Ganglia | | | | | | | | | | | | | | | | | | | | | |
| | Corpus callosum | | | | | | | | | | | | | | | | | | | | | |

Results are shown as POWV staining (upper panel) or inflammation (below panel) ranking between the groups: “white” no positive cells/no inflammation, * 1 to 5 positive cell in an area. The colors in each spot mean the grade of POWV-positive cells/inflammation for each brain area, where the yellow represents low level inflammation/POWV staining and the black represents wide spread inflammation/POWV staining. The color grade ranking from low to high are:    



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