

Supplementary Figure

(A–B) qPCR analysis of interferon-stimulated genes (*Ifi2712a*, *Ifi44*, *Ifit1*, *Isg15*, *Rsad2*, *Siglec1*) in brains of *Rnaset2*^{-/-} mice normalized to *Rnaset2*^{+/+} and a reference gene at three (A), six, 17, and 28 weeks of age (B). The panel demonstrates a consistent and broad ISG upregulation, indicative of a robust interferon signature in *Rnaset2*^{-/-} brains (A–B). Data are shown as scatter dot plots with mean ± SEM. One-way ANOVA with Tukey's multiple comparison test; * = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$, **** = $p < 0.0001$, ns = not significant. $n=2$ per group for three weeks; $n=4$ per group for six, 17 and 28 weeks (except for *Siglec1* at 17 weeks, $n=3$). *Ifi2712a*: interferon alpha-inducible protein 27-like 2A (human ortholog: *IFI27*); *Ifi44*: interferon-induced protein 44; *Ifit1*: interferon-induced protein with tetratricopeptide repeats 1; *Isg15*: interferon-stimulated gene 15; *Rsad2*: radical S-adenosyl methionine domain containing 2; *Siglec1*: sialic acid binding Ig-like lectin 1.

(C–F) Western blot analysis of apoptotic markers at three weeks. BAX protein expression was comparable between genotypes, with one *Rnaset2*^{-/-} animal showing a minor increase (C). Cleaved CASPASE 3 (cl. CASP3) was undetectable in both genotypes. Caspase 3 control cell extracts (#9663, Cell Signaling Technology) were included as a positive control (D). No differences were observed in full-length PARP (E) or cleaved PARP (F). β-ACTIN or GAPDH served as loading controls. WT1-2: *Rnaset2*^{+/+}, KO1-2: *Rnaset2*^{-/-}. BAX: Bcl-2-associated X protein; cl. CASP3: cleaved caspase-3; PARP: poly(ADP-ribose) polymerase 1; cl. PARP: cleaved poly(ADP-ribose) polymerase 1.