



**SUPPLEMENTARY FIG. S2.** MRI infusate correlation to punches for biochemistry analyses. Fresh-frozen brain blocks anatomically matched to MR images collected during real-time CED infusion of either PBS-Gd (A and B) or AAV2-hASM/Gd (C-H) bilaterally into the thalamus of NHPs indicated location of 6-mm punches taken for biochemistry relative to MR surrogate signal. Note that tissue collected for biochemical analysis from NHP 4 did not coincide with the location of AAV2-hASM infusion. 3m, 3-month treatment; 9m, 9-month treatment; CTL, control; HD, high dose; LD, low dose; L/R, left/right side; Th, thalamus.