Supplementary Figure 2  Sound-stimulation produced significant MEMRI enhancement in auditory brainstem nuclei.

MR images were acquired before (Pre) and 24-h after (Post 24h) injection of MnCl2. For the 24-h period following MnCl2 injection, mice were maintained in the acoustic isolation chamber with either no sound stimulation (a; n = 7) or with sound stimulation (b; n = 7). Compared to no stimulation, the mice exposed to 24-h of sound stimulation showed significant enhancement (two-tail t-test) in both inferior colliculus (IC, arrows) and cochlear nucleus (CN, arrowheads), (c; *P < 0.05, n = 7), while there was no difference in the caudate putamen (CPu).

Data were analyzed by first defining the MEMRI signal change in each brain region:

\[
CN' = CN_{Post} - CN_{Pre}; \quad IC' = IC_{Post} - IC_{Pre}; \quad CPu' = CPu_{Post} - CPu_{Pre}.
\]

As in other data presented, enhancement was normalized to the CPu in each mouse: Enhancement = \([IC', CN'] / CPu'\)