



Supplemental Figure 1: Gd-enhancement in MB tumors in Ptch1-CKO mice.

MEMRI images were acquired using the 15-minute 3D T1w sequence (see Methods), 24h after intra-peritoneal (IP) injection of a standard dose of MnCl₂. The resulting pre-gadolinium (Gd) images demonstrated advanced MB tumors (*) in each Ptch1-CKO mouse (N=6). Post-Gd images (right panels) were then acquired from each mouse during the same imaging session, immediately after intra-venous IV injection of Gd-DTPA (Magnevist; 0.1 mM/kg dose) using a tail vein catheter. The post-Gd images showed heterogenous increase in signal intensity (yellow arrows) within each of the tumors, similar to previous reports (e.g., Nelson et al, J Neurooncology 2003; Reference [37]). Brain tumor uptake of Gd-DTPA has generally been related to contrast leakage due to disruption of the blood-brain-barrier (BBB) or abnormal tumor vessels, which can differ between individual tumors and tumor type. In the Ptch1-CKO MB tumors, Gd-enhanced MRI was clearly less useful than MEMRI for determining the tumor margins and to assess tumor volume longitudinally, and was therefore not pursued further.

Supplemental Table 1

Age is not a good predictor of tumor and brain ventricle volume in Ptch1-CKO mice.

Weeks	N	Tumor Volume (mm ³)				Brain Ventricle Volume ^a (mm ³)			
		Min	Max	Mean	SD	Min	Max	Mean	SD
11-15	20	19.2	368.7	114.3	85.2	11.3	112.7	34.9	22.9
16-20	19	39.1	420.5	104.9	88.3	3.2	207.4	36.7	45.4
21-25	6	26.0	380.9	156.6	129.1	8.8	148.8	45.1	53.0
26	Mouse 1	-	-	49.7	-	-	-	51.1	-
28	Mouse 2	-	-	24.0	-	-	-	6.1	-

^a Normal ventricle volume = 2.67 ± 1.70 mm³ (N=5)