

Supplementary Information for

Cell-specific delivery of GJB2 restores auditory function in mouse models of DFNB1 deafness and mediates appropriate expression in NHP cochlea

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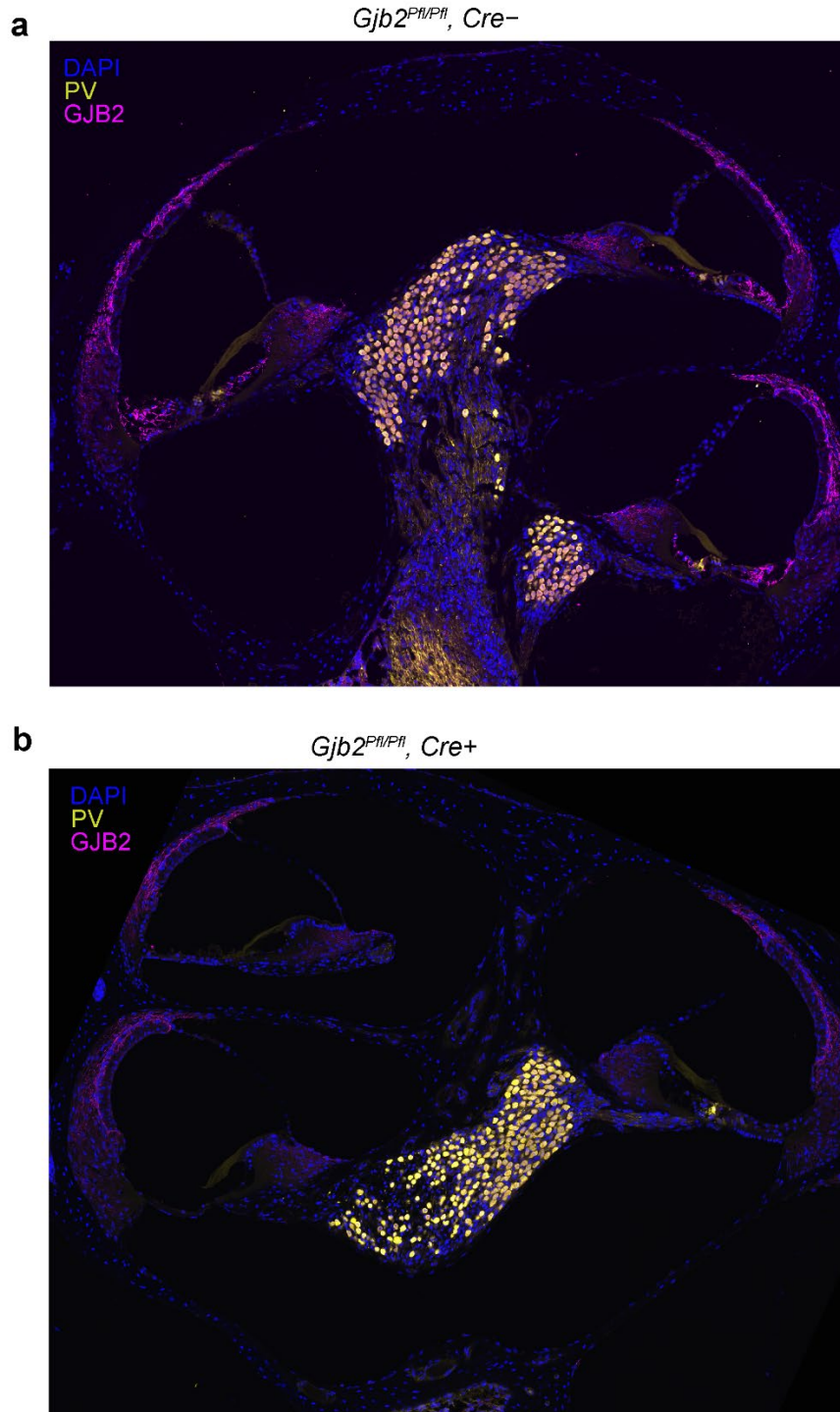
Supplementary Table 1. Nucleotide sequence information

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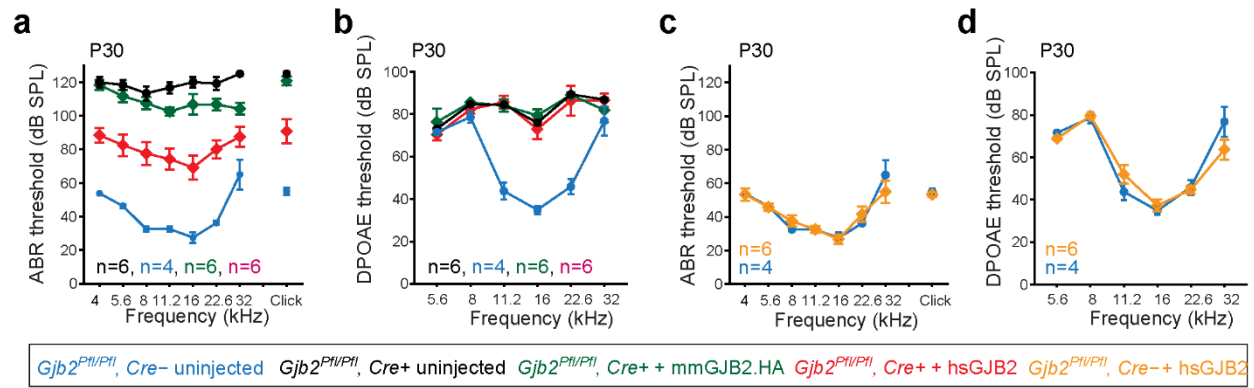
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Supplementary Table 2. NHP study design

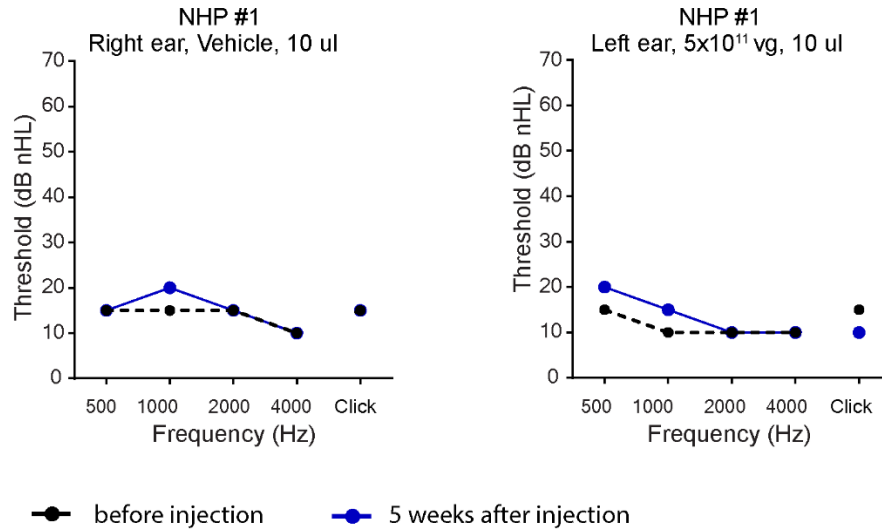
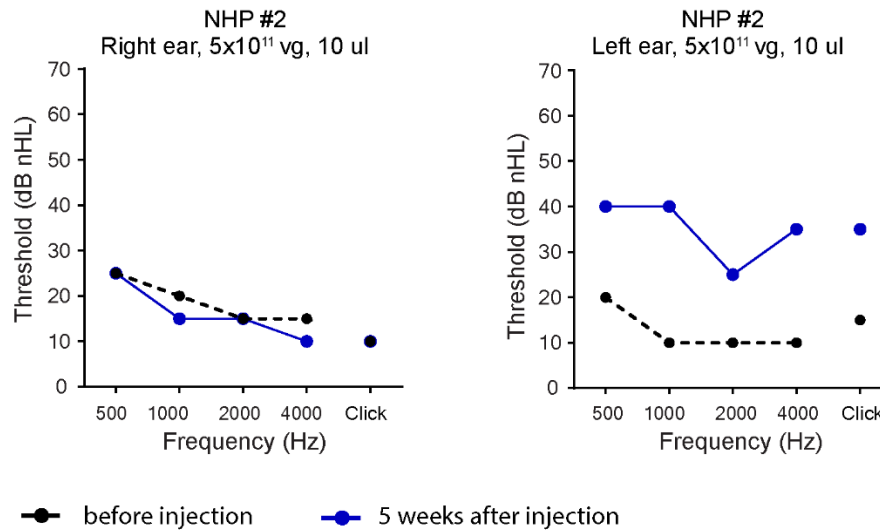
NHP	Sex	Age	Body weight (kg)	Test Article	Ear	Volume	Dose (vg)
NHP#3	male	3y4m	3.0	AAV-CBA-eGFP	right	~20 µl	5.8x10 ¹¹
NHP#1	female	3y10m	2.6	Vehicle	right	~10 µl	--
				AAV-GRE-hsGJB2.HA	left	~10 µl	5.0x10 ¹¹
NHP#2	male	2y8m	3.2	AAV-GRE-hsGJB2.HA	right	~10 µl	5.0x10 ¹¹
				AAV-GRE-hsGJB2.HA	left	~10 µl	5.0x10 ¹¹



Supplementary Fig. 1 | Conditional knockout mice exhibit degeneration of the organ of Corti by P30. Distribution of GJB2 in *Gjb2^{Pfl/Pfl}, Cre⁻* (a) and *Gjb2^{Pfl/Pfl}, Cre⁺* (b) mouse cochleas at P30. Representative images shown; experiment repeated in n=5 mice with similar results.



Supplementary Fig. 2 | Deafness in *Gjb2*^{Pfl/Pfl}, *Cre*+ DFNB1 mouse models is rescued with vectors expressing GJB2.HA and GJB2 under control of GREs. **a** Average tone ABR thresholds as a function of frequency and click thresholds for P30 uninjected *Gjb2*^{Pfl/Pfl}, *Cre*- control mice (blue, *n*=4), uninjected *Gjb2*^{Pfl/Pfl}, *Cre*+ conditional knockout mice (black, *n*=6), conditional knockout mice injected with AAV-GRE-mmGjb2.HA (green, *n*=6) and conditional knockout mice injected with AAV-GRE-hsGjb2 (red, *n*=6). **b** Average DPOAEs thresholds at P30 for the same mice. **c**, **d** Control *Gjb2*^{Pfl/Pfl}, *Cre*- mice injected with AAV-GRE-hsGJB2 (orange, *n*=6) displayed ABR (**c**) and DPOAE (**d**) responses comparable to untreated control mice (*n*=4). All data are presented as mean values $\pm$ SEM. Source data are provided as a Source Data file.

a**b**

Supplementary Fig. 3 | Physiological tests indicate vector safety. a, b. NHP #1 (**a**) and NHP #2 (**b**) were tested with click and tone ABR before AAV-GRE-hsGJB2.HA or vehicle control injection (black) and then five weeks later (blue). Source data are provided as a Source Data file.