Supporting Information

Inaoka et al. 10.1073/pnas.1110036108

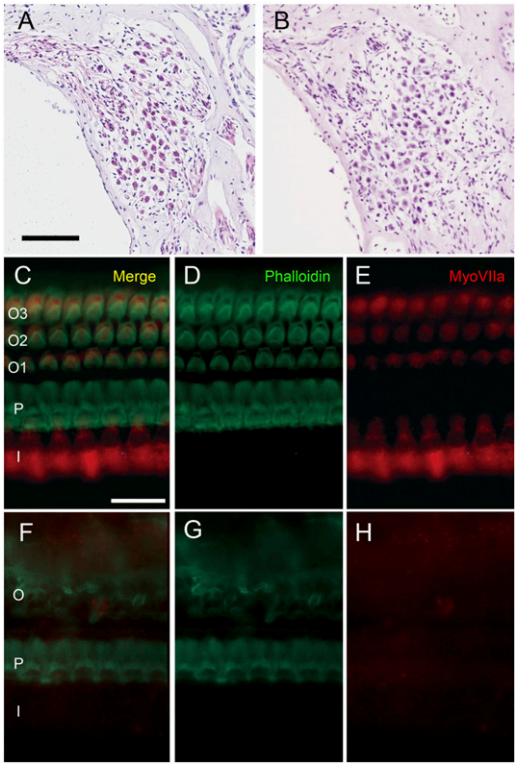

Fig. S1. Histology of guinea pig cochleae 7 d after application of kanamycin (KM) and ethacrynic acid (EA). (*A* and B) H&E staining of cochlear sections shows no significant degeneration in spiral ganglion neurons in the cochlea damaged with KM and EA (*B*) compared with the spiral ganglion neurons in the normal cochlea (*A*). (Scale bar: *A*, 100 μm.) (*C*–*H*) Immunostaining for myosin VIIa (MyoVIIa antimyosin VIIa rabbit polyclonal antibody, 1:500; Proteus BioScience) and Alexa-Fluor 488 phalloidin (Invitrogen) staining shows the location of three rows of outer hair cells (O1–3), inner pillar cells (P), and inner hair cells (I) in the basal turn of the normal cochlea (*C*–*E*), whereas all hair cells are missing in the basal turn of the cochlea damaged with KM and EA (*F*–*H*). (Scale bar: *C*, 20 μm.)

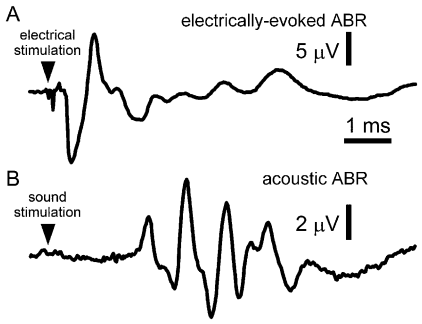

Fig. S2. Representative auditory brain-stem responses (ABRs) to electrical or acoustic stimuli in normal guinea pigs. (*A*) ABR by electrical stimuli at 4.50 V. (*B*) ABR by acoustic stimuli at 105 dB, and sound pressure level at a frequency of 8 kHz.

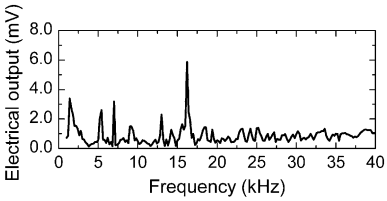

Fig. S3. Electrical output from the implantable miniaturized device in response to sound application at 100-dB sound pressure levels at frequencies of 1–40 kHz in air. The implantable miniaturized device is capable of generating electrical output ranging from 0.14 to 5.88 mV.