

keyword



hearing loss

cochlea

hair cells

cochlear hair cells



Official website

Image analysis of mouse cochlear hair cells

By imaging and analyzing hair cells in the mouse cochlea, we can evaluate ototoxicity and efficacy of drugs in a hearing loss model.

Test Information

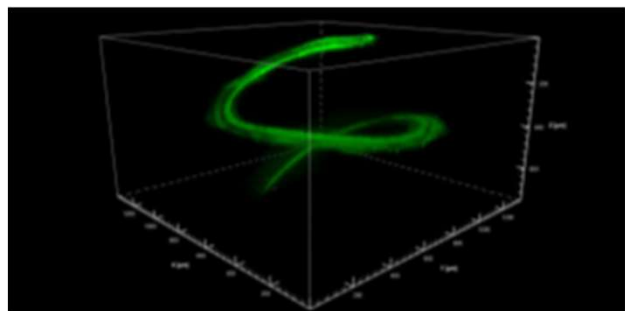
Animals used: CBA/J mice (drug-induced hearing loss model), C57BL/6J mice (age-related hearing loss model, noise-induced hearing loss model)

Cochlea collection and trimming: Nihon Bioresearch Inc.

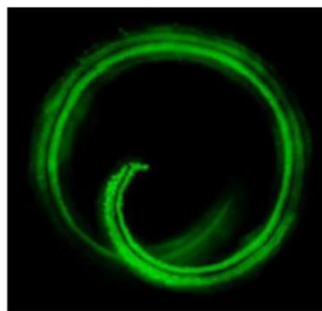
Staining, image acquisition, and image analysis: Nikon Solutions Co., Ltd.

Evaluation and Results

Image acquisition: Cochlear tissue extracted from mice is decalcified, cleared, and immunostained, and then imaged under a microscope.



3D image



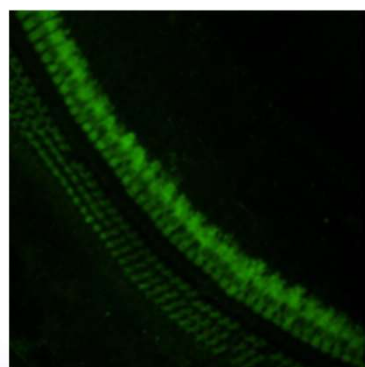
2D image

Species, strain, age in weeks:
CBA/J mice at 8 weeks of age

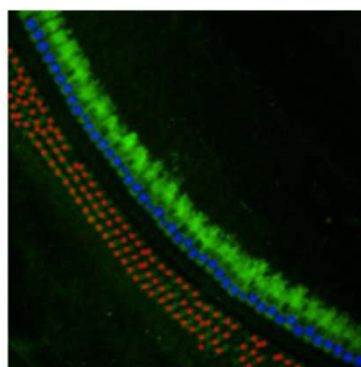
Microscope:
Multiphoton Microscope System
AX R MP (Nikon Solutions Co., Ltd.)

Location:
Nikon BioImaging Lab –Shonan-

Image analysis: Counting the number of cochlear hair cells



Before image analysis



After image analysis

Results

Since the entire cochlea was stained without damaging, hair cells were observed with the reduced artifacts. Quantitative evaluation of the number of hair cells was possible by image analysis.