

[Acta Otolaryngol Suppl.](#) 2010 Nov;(563):95-100. doi: 10.3109/00016489.2010.486799.

# Hydrogen protects vestibular hair cells from free radicals

Akiko Taura <sup>1</sup>, Yayoi S Kikkawa, Takayuki Nakagawa, Juichi Ito

Affiliations

PMID: 20879827 DOI: [10.3109/00016489.2010.486799](#)

## Abstract

**Conclusion:** Hydrogen gas effectively protected against the morphological and functional vestibular hair cell damage by reactive oxygen species (ROS).

**Objective:** ROS are generally produced by oxidative stress. In the inner ear, ROS levels increase as a result of noise trauma and ototoxic drugs and induce damage. It is thus important to control ROS levels in the inner ear. The protective effects of hydrogen gas in cochlear hair cells have been reported previously.

**Methods:** This study examined the effects of hydrogen gas on mouse vestibular hair cell damage by ROS using antimycin A.

**Results:** In the group \*exposed to hydrogen gas, vestibular hair cells were morphologically well preserved and their mechano-electrical transduction activities were relatively well maintained when compared with controls. Hydroxyphenyl fluorescein (HPF) fluorescence in vestibular tissue was also reduced by hydrogen gas.

## Related information

[PubChem Compound](#)

[PubChem Compound \(MeSH Keyword\)](#)

[PubChem Substance](#)

## LinkOut – more resources

Medical

[MedlinePlus Health Information](#)