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By: Tudor Vieru, Science Editor



Hearing aids could become obsolete if genetic research comes up with a way of inhibiting gene influences on the ear
AliBaba

Progressive Hearing Loss Cause Discovered

Genetic abnormalities made mice exhibit early signs of the disease

A newly-identified mutation in the genomes of test mice could hold the key to a better understanding of progressive hearing loss, a human condition that is characterized by the loss of the auditory sensation in people exposed to single, very loud events or to constant powerful noises. The mutation, appropriately dubbed Oblivion, is thought to work similarly in both humans and mice.

Scientists discovered many genes that play a significant role in this affliction over the years, but its main causes were still believed to be environmental factors. Now, researchers at the Wellcome Trust Sanger Institute in Cambridge, UK, found out that genetics could play a much more complex role in this degenerative condition than anyone previously thought.

Progressive hearing loss affects about 6 in 10 people aged above 70 and can lead either to hearing impairments or to complete deafness, depending on the rate at which the disease progresses. Professor Karen Steel, lead author of the new study, says that this discovery is important because it links the mutations of a gene known as *Atp2b2* to the disease. The fact that this gene is identical in mice and humans alike could open the door for further research on the matter.

"When we mapped the mutation to the mouse genome, we quickly found a probable cause for hearing loss. We showed that the mutant mice carried a change in one letter of their genetic code in a gene called *Atp2b2*. Changing a specific C to a T in this gene stops it from producing a normal molecular pump that is needed to keep hair cells in the ear working efficiently by pumping excess calcium out of the cell," Steele explained.

The main goal of this research is to further the understanding of the mechanisms that progressive hearing loss uses to make the auditory sensation in humans fade out or disappear over the years. New ways of diagnosing and even treating the affliction could become available to doctors in the future, if other studies focused on the effect of *Atp2b2* come up with viable ways of inhibiting the action of this gene.