Abstract

The EU-funded project EUROHEAR (‘Advances in hearing science: from functional genomics to therapies’) set out to expand medical understanding of hearing loss and treatment. Tens of millions of Europeans suffer from a hearing impairment of some degree. They range from the one child in 1,000 who is born deaf, to the many whose hearing is declining as they grow older. EuroHear has two closely inter-related objectives. These are (1) to provide fundamental knowledge about the development and function of the inner ear, and (2) to identify the molecular defects underlying hereditary hearing impairments (HI), including presbycusis, one of the most frequent forms of HI. Achieving these objectives will facilitate the development of therapies for alleviating HI.

Mission

The research team’s goals were: to identify the genes involved in both early-and late-onset hearing impairment; to understand the mechanisms behind both normal and impaired hearing; and to develop tools to prevent and cure hearing impairment.
EUROHEAR's researchers, provided a better understanding of how these hair cells operate and the specific mechanisms involved in turning sounds into electrical signals.

In total, the team discovered 12 new genes for deafness, most of which affect the cochlea. One of the genes, however, causes a defect in nerve cells of the central nervous systems that are responsible for processing the information coming from the cochlea.

Researchers also developed diagnostic tools to identify which genetic mutation is causing a patient's hearing problems. This is important because it can help doctors decide if a deaf child will benefit from a cochlear implant. For a cochlear implant to work, the auditory nerve must be intact, so if a patient has a mutation that affects only the cochlea, he or she will likely benefit from a cochlear implant.

**Structure & Governance**

Coordinator

INSTITUT DE LA SANTE ET DE LA RECHERCHE MEDICALE, France
Rue de Tolbiac
PARIS
France

**Financing**

The project is part of the European Commission Sixth Framework Programme (FP6)

**Impact/Accomplishment**

With the completion of EUROHEAR's work in November 2009, a wealth of new information on the genetics behind hearing impairment was made available, advancing medical knowledge on causes,
diagnosis and potential treatments.

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**Links/Social Media Feed**

| Homepage | http://cordis.europa.eu/project/rcn/75689_en.html |

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**Points of Contact**

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