



DECIBELTHERAPEUTICS

Decibel Therapeutics Presents at 2017 Annual Association for Research in Otolaryngology (ARO) Meeting

Important progress in molecular understanding of hearing

Cambridge, Mass., February 13, 2017 - Decibel Therapeutics, a company focused on discovering and developing new therapies to protect, repair, and restore hearing, today announced the presentation of data from advancements in its end-to-end technology platform. The data are being presented at the 40th Annual Midwinter Meeting of the Annual Association for Research in Otolaryngology (ARO) in Baltimore, MD.

“Knowing the array of different cell types in the inner ear and understanding how these cell types are transcriptionally regulated—and why different cell types are susceptible to damage—will help with the discovery of drugs that will one day fulfill Decibel’s mission of protecting and restoring hearing,” said Michael Su, chief scientific officer of Decibel Therapeutics. Decibel researchers employed cutting-edge genomics tools to map all of the genes that are on or off within individual cells. This allowed the groups to find significant molecular-level differences between all the known major cell types in the adult cochlea, encompassing 40 unique classifications. Particularly important for translational studies, Decibel scientists were able to devise methods for performing this technique on the adult cochlea, which has traditionally been challenging to work with due to its intricate structures.

Dr. Su continued, “What this platform allows us to do is to establish a genetic fingerprint for each cell type, spanning the continuum from the normal to the diseased state. Our researchers are now applying this technology to gain an unprecedented understanding of how each cell within the cochlea responds to a variety of different factors. I am thrilled with our progress toward creating a first-of-its-kind platform to define the underlying biological causes of hearing disorders.”

Following is a summary of highlights from the poster presentations:

PD 31 | An Atlas of Cell-Type-Specific Transcriptomes in the Newborn Mouse Cochlea (Oral presentation, Sunday Feb 12, 8am)

- Single-cell transcriptional profiling has emerged as a powerful, unbiased tool for dissecting cellular heterogeneity at the molecular level.

- Given the relatively small size of the mouse inner ear, recent improvements in throughput and sensitivity of technology permit organ-wide profiling of all the cell types in the cochlea in a single experiment.
- Single-cell RNA-Seq technology has advanced sufficiently that all the major cell types in the cochlea can be profiled in a single experiment.

PS 748 | Technical Comparison of Four Single-Cell RNA-Seq Methodologies in Newborn Mouse Cochlea (Poster presentation, Tuesday Feb 14, 1-5:30pm)

- Decibel scientists have systematically compared new RNA-seq methodologies for profiling of transcripts in dissociated single cells of newborn mouse cochlea.
- Identified an RNA-seq method that enables assessment of damage response at the molecular level across all cochlear cell types in a single experiment

Additional oral and poster presentations with Decibel co-authors include:

- PD 32 | A Comprehensive Map of Mammalian Auditory Sensory Cell Development Generated Using High-Throughput Transcriptional Profiling
- PS 349 | Transcriptional Analysis of Heat-Shocked Mouse Utricle: Aligning Transcriptome to Drug Response
- PS 747 | Drop-Seq as a Lower-Cost, High-Throughput Method for Single-Cell Gene Expression Profiling of Cochlear Cells
- PS 749 | Single-cell RNA-Seq Reveals Transcriptional Diversity in the Spiral Ganglion

About Decibel Therapeutics

Decibel Therapeutics seeks to create a world in which the benefits and joys of hearing are available to all by discovering and developing new therapies to protect, repair, and restore hearing. Founded by the world's preeminent experts in impaired hearing, Decibel Therapeutics was launched in 2015 by Third Rock Ventures and is headquartered in Cambridge, Mass. For more information, please visit www.decibeltx.com.

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