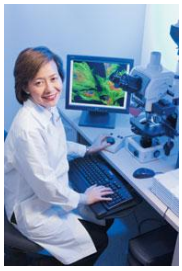
Eri Hashino

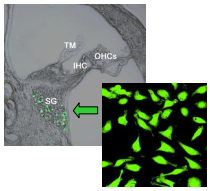
- Ph.D. in Neurobiology, Nagoya Univ., Japan
  - Hair Cell Regeneration
- Postdoctoral Fellowships at SUNY at Buffalo
  - Hair Cell Regeneration
  - Neurotrophic Factors in Neural Development
- Associate Professor, Department of Otolaryngology, IUSM
  - Stem Cell Biology
  - Inner Ear Development

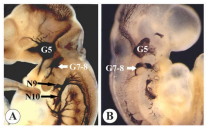


PARC

Current Research Areas

- Stem cell biology
  - Adult stem cells
  - Embryonic stem cells
  - In vitro characterization
  - Animal models and transplantation
- Inner ear development
  - Retinoid signaling
  - Neuronal cell fate determination
- Animal Models:
  - Mouse
  - Chicken

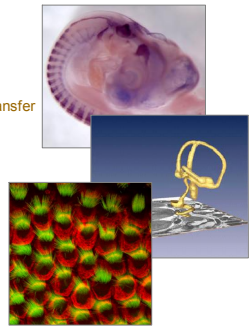




PARC

Methodologies

- Molecular biology
  - RT-PCR
  - In situ hybridization
  - RNAi
  - Retroviral vector-mediated gene transfer
- Cell Biology
  - Cell and tissue culture
  - Protein assays
- Imaging
  - Confocal microscopy
  - Time-lapse imaging
  - Electron microscopy
  - 3D reconstruction



PARC

Recent Results

Demonstration of synergistic effects of Shh and RA on adult stem cell differentiation.

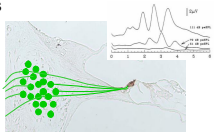
Identification of a phenotypically defined stem cell population in various adult tissues (brain, bone marrow, muscle & adipose).

Demonstration of essential roles for the RA receptors RARα and RARγ in inner ear development.

PARC

Future Directions

- Functional analysis of adult stem cells
  - Target innervation
  - ABR/CAP recordings
  - Patch-clamp recordings
  - Ca^{2+} imaging
  - In vivo imaging



- Auditory neuron development
  - Identification of downstream targets of RA signaling essential for inner ear development
  - Inducible/conditional gene targeting
  - In vivo RNAi

PARC