Sumeet Pal Singh | PhD

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Personal Details

Birth Date: August 12, 1985
Nationality: Indian
Family Status: Married

Research Experience

DFG Center for Regenerative Therapies Dresden — **Dresden, Germany**
Post-Doctoral Fellow — *2014–Current*
Research Advisor: Nikolay Ninov, Ph.D.
Project title: Cellular and Epigenetic Dynamics in β-cell during Development, Regeneration and Diabetes.

Max Planck Institute of Molecular Cell Biology and Genetics — **Dresden, Germany**
Post-Doctoral Fellow — *2013–2014*
Research Advisor: Jochen Rink, Ph.D.
Project title: Live Imaging Stem Cell Dynamics during Growth and Regeneration.

Education

Duke University — **Durham, USA**
PhD, 3.335/4.0 — *2008–2013*
Research Advisor: Kenneth D. Poss, Ph.D.
Thesis Title: Cellular and Molecular Determinants of Zebrafish Fin Osteoblast Regeneration

Indian Institute of Technology (IIT) — **Kanpur, India**
B. Tech., Biological Sciences and Bioengineering — *2004–2008*
Performance: 8.7/10

Grants Awarded

EFSD/Lilly Young Investigator Research Award — *2018–2019*
The role of tetraspanin-7, an islet autoantigen, in regulating beta-cell functional heterogenity

CRTD Postdoctoral Seed Grant — *2016–2017*
Dissecting functional heterogeneity in β-cells using Single-cell RNA-Seq

CRTD Postdoctoral Seed Grant — *2015–2016*
Inducible Cas9/CRISPR for Conditional Gene Knockouts in Vertebrate Regenerative Model Systems

Awards and Achievements

DZD Award: Conference Presentation — *2016*
Best Talk Award: Genetics and Genomics Departmental Retreat — *2012*

Best Talk Award: Cell Biology Departmental Retreat *2012*
Summer Internship Award: Jawaharlal Nehru Centre for Advanced Scientific Research *2007*
Baljit and Nirmal Dhindsa Scholarship: Highest Grades (Biological Department) *2005*
Academic Excellence Award: Freshman Students *2004*

Publications

Original Research Articles

1. **Singh SP**[§], Janjuha S, Chaudhuri S, Reinhardt S, Dietz S, Eugster A, Bilgin H, Korkmaz S, Zararsiz G, Ninov N, Reid JE.
[§]Corresponding Author
Machine learning based classification of cells into chronological stages using single-cell transcriptomics.
Scientific Reports: November 21; doi:10.1038/s41598-018-35218-5 *2018*

2. Cox BD, Simone AD, Tornini VA, **Singh SP**, Talia SD, Poss KD.
In Toto imaging of dynamic osteoblast behaviors in regenerating skeletal bone.
Current Biology: November 29; doi:10.1016/j.cub.2018.10.052 *2018*

3. Janjuha S*, **Singh SP***, Ninov N.
*Equal contribution
Analysis of Beta-cell Function Using Single-cell Resolution Calcium Imaging in Zebrafish Islets.
JoVE: July 03; doi:10.3791/57851 *2018*

4. Janjuha S*, **Singh SP***, Tsakmaki A, Gharavy SNM, Murawala P, Konantz J, Birke S, Hodson DJ, Rutter GA, Bewick GA, Ninov N.
*Equal contribution
Age-related islet inflammation marks the proliferative decline of pancreatic beta-cells in zebrafish.
eLife: April 06; doi:10.7554/eLife.32965 *2018*

5. **Singh SP**, Janjuha S, Hartmann T, Kayisoglu O, Konantz J, Birke S, Murawala P, Alfar EAA, Murata K, Eugster A, Tsuji N, Morrissey ER, Brand M, Ninov N.
Different developmental histories of beta-cells generate functional and proliferative heterogeneity during islet growth.
Nature Communications: September 22; doi:10.1038/s41467-017-00461-3 *2017*

6. Fei JF, Knapp D, Schuez M, Murawala P, Zou Y, **Singh SP**, Drechsel D, Tanaka EM.
Tissue and time-directed electroporation of CAS9 protein-gRNA complexes in vivo yields efficient multigene knockout for studying gene function in regeneration.
npj Regenerative Medicine: June 1; doi:10.1038/npjregenmed.2016.2 *2016*

7. **Singh SP**, Holdway JE, Poss KD.
Regeneration of amputated zebrafish fin rays from de novo osteoblasts.
Developmental Cell: Apr 17; doi:10.1016/j.devcel.2012.03.006 *2012*

8. Wang JH, Panáková D, Kikuchi K, Holdway JE, Gemberling M, Burris JS, **Singh SP**, Dickson AL, Lin YF, Sabeh MK, Werdich AA, Yelon D, Macrae CA, Poss KD.
The regenerative capacity of zebrafish reverses cardiac failure caused by genetic cardiomyocyte depletion.

Development: Aug 15; doi:10.1242/dev.068601 *2011*

Review Article

9. **Singh SP**, Ninov N.
The triumvirate of beta-cell regeneration: Solutions and bottlenecks to curing diabetes.
Int. J. Dev. Biol.: June 28; doi: 10.1387/ijdb.180067nn *2018*

Book Chapter

10. **Singh SP**, Ninov N.
Multicolor labeling and tracing of pancreatic beta-cell proliferation in zebrafish.
Animal Models of Diabetes: Methods and Protocols: In Review. *2018*

Conference Talks

2nd International Biostatistics Congress **Antalya, Turkey**
Bioinformatics *2017*

11th CRTD Summer Conference **Dresden, Germany**
Regenerative Medicine *2017*

EMBO Conference **Paestum (Salerno), Italy**
The molecular and cellular basis of regeneration and tissue repair *2016*

MPI-CBG 15th Anniversary Symposium **Dresden, Germany**
Development and Regeneration *2016*

10th CRTD Summer Conference **Dresden, Germany**
Regenerative Medicine *2016*

Helmholtz Thementag on Diabetes **München, Germany**
Helmholtz Zentrum Diabetes Science day *2015*

9th CRTD Summer Conference **Dresden, Germany**
Regenerative Medicine *2015*

Scientific Outreach

Science Slam (Deutsch)
Vorhersage des Zellulären Alters durch Künstliche Intelligenz *2017*
https://www.youtube.com/watch?v=DW-Ti138B2w

Journal Coverage Podcast
Audio interviews of scientific authors with recent, important publications *2015–2017*
http://journalcoverage.blogspot.com/

Pedagogy

Freedom English Academy, New Delhi **via Skype, India**
English Language Mentor *2018–Ongoing*

Practical course conductor, CRTD **Dresden, Germany**
School Student Lab Practical *2018*

Teaching Assistant (TA), Duke University **Durham, USA**
Advanced Topics: Genetics/Genomics *2009*