Shahragim Tajbakhsh: Curriculum Vitae

EDUCATION AND PROFESSIONAL EXPERIENCE

2018 Professor Exceptional Class, Institut Pasteur
2010 Professor, Institut Pasteur
2007 Lab Head, Stem Cells & Development Unit, Institut Pasteur
2001-07 Lab Head, Stem Cells & Development G5, Institut Pasteur
2001 Associate Professor, Institut Pasteur, Paris
1995 Tenured staff scientist, Institut Pasteur.
1990-95 Post-doctoral fellow, Institut Pasteur
1988-89 Post-doctoral fellow; NRCC, Ottawa
1985-88 Doctor of Philosophy, Biology (Molecular Genetics). Carleton University, Ottawa and National Research Council of Canada, Division of Biological Sciences
1979-83 Bachelor of Science, Biology, First Class Honours. Carleton University.

TEACHING AND TRAINING (LAST FIVE YEARS)

Supervision of 5 theses and 7 Postdocs; Participation in 5 thesis defenses; Teaching : 32 lectures to Masters/PhD students in courses; Tutor on 13 PhD thesis committees nationally/internationally

PRESENTATIONS AT INTERNATIONAL MEETINGS (LAST FIVE YEARS)

129 invited/selected speaker in conferences or institutes; 10 Keynote lectures; available upon request; ex.
02/2014 BSDB/BSCB, British Society for Developmental Biology, Warwick UK, Molecular and lineage relationships of muscle stem cells in development and regeneration, invited
11/2016 Swiss meeting on Muscle Research, Macolin, Switzerland. Making sense of heterogeneities in adult skeletal muscle stem cells, *Keynote lecture*.
06/2018 4th Gordon Conference on Notch Signaling in Development, Regeneration & Disease, Bates College, Lewiston, USA. Notch Regulates Multiple Facets of the Skeletal Muscle Stem Cell Niche, invited.
10/2018 3rd International Conference on Stem Cells, Development and Cancer, Montreal, Canada. Developmental and postnatal roles of stem cells and their niche, *Keynote lecture*.
03/2019 Gordon Conference, Stem Cells and Cancer. Ventura, USA, Skeletal muscle stem cells in developmental and regenerative myogenesis, invited.

AWARDS AND DISTINCTIONS

2017 Chair of Excellence, Louis Pasteur, Institut Pasteur
2016 Member Academia Europaea
2016 Vice-President French Society for Stem Cell Research
2014 French Academy of Sciences / Fondation Generale de Santé, for Stem Cell research
2013 EMBO Member
2010 Vallery-Radot Prize, Institut Pasteur
2000 Prix Georges Zermati; Fondation de France

OTHER SCIENTIFIC OR ADMINISTRATIVE ACTIVITIES (LAST FIVE YEARS)

Administrative responsibilities:
2011 Scientific Council of Fondation Générale de Santé
2011-16 Vice-Director of CNRS URA 2578
2012-16 Head, Dept. of Developmental & Stem Cell Biology, Institut Pasteur
2016 Board of Directors: International Society of Differentiation
2016 Administration Council, Vice President, French Society for Stem Cell Research (FSSCR)
2016 Board of Directors: Groupement de Recherche: Cellules Souches (CNRS)
2017 ISSCR international and advisory committees

Science coordination and evaluation:
2009 Scientific Council of Association Française contre les myopathies
2009-19 President Commission "Fundamental Myology" Association Française contre les myopathies.
2011-24 Co-Director of LabEx REVIVE: Stem cells in regenerative biology and medicine
2015-18 Scientific Advisory Board, PluriMes FP7 EU network, Prof. A. Smith.
2018 Human Cell Atlas project grant call strategic committee, INSERM
2014-2019 Reviewer for Nature Medicine, Nature Comm., Nature Cell Biology, Development, Dev. Biol., Cell Metabolism, Dev. Cell, Stem Cell Reports, PloS Genetics, Skeletal Muscle, Cell Reports, Cell Stem Cell, eLife, Stem Cells, EMBO J
Site Reviews: DanStem (Copenhagen, 2019), IP-Korea (2015; 2017; 2018), IP-Tehran (2017, 2018), CDB/CBI Toulouse (2014 X 2; 2015; 2016, 2019); IGBMC (Strasbourg, 2014); Ecole Nationale Vétérinaire de Nantes, AFM (2014); MyoNeurALP U. of Lyon, AFM, chair of committee (2016, 2017, 2018, 2019); Liebniz Research Institute on Aging (2018), Canadian Nuclear Laboratories, Chalk River (2017).
2006 Member of *Stem Cells* editorial board
2017 Member of *Nature Publications Journal Regenerative Medicine* editorial board

2019 Member of *eLife* editorial board
2011-17 Member of *Experimental Cell Research* editorial board
2015-18 *Development* advisory board

Organization of national or international meetings (5/14):

2014 FASEB Skeletal Muscle Satellite & Stem Cells, Steamboat Springs, USA
2015 EMBO Conference: Genetic Control of Development and Evolution, IP, Paris
2016 Engineering the embryo: beyond systems biology, IP, Paris
2017 EMBO Conference: Advances in Stem Cells and Regenerative Medicine, EMBL, Heidelberg
2019 Stem Cells & Ageing, Les Treilles, France

JOURNAL REFEREES: *ex.* Developmental Cell, Development, J. Cell Science, EMBO J, Stem Cells, J. Cell Biology, PloS Genetics; Genes & Development, Cell Stem Cell, Science, Nature Cell Biology.

FUNDING: ERC Adv Grant (2013-2019); LabEx REVIVE (2011-2022); Agence Nationale de la Recherche (2017-2019); Association Française contre les myopathies (2012-2014); Fondation pour la Recherche Médicale (2012-2015); Association pour la Recherche sur le Cancer (2011-2014); Agence Nationale de la Recherche, ANR (2011-2014); FP7 EU Marie Curie (2009-2013); FP7 EU Optistem (2009-2013); FP7 EU EuroSystem (2008-2012)

Selected publications (10/148): h-index : 59 (Google Scholar); 52 (Web of Science) non-self citations >9300

Kassar-Duchossoy, L., Gayraud-Morel, B., Gomès, Rocancourt, D., Buckingham, M., Shinin, V., *S. Tajbakhsh* (2004). *Mrf4* determines skeletal muscle identity in *Myf5 :MyoD* double mutant mice. **Nature** 431: 466-471.

Shinin, V., Gayraud-Morel, B., Gomes, D., and *S. Tajbakhsh* (2006). Asymmetric division and cosegregation of template DNA strands in adult muscle satellite cells. **Nat Cell Biol.** 8, 677-82.

Sambasivan, R., B. Gayraud-Morel, G. Dumas, C. Cimper, S. Paisant, R. G. Kelly, *S. Tajbakhsh* (2009). Distinct regulatory cascades govern extraocular and pharyngeal arch muscle progenitor fates. **Developmental Cell**. 16: 810-821.

Rocheteau, P., Gayraud-Morel, B., Siegl-Cachedenier, I., Blasco, M. and *S. Tajbakhsh* (2012). A subpopulation of adult skeletal muscle stem cells retains all template DNA strands after cell division. **Cell**, 48: 112-125.

Castel*, D., P. Mourikis*, S. Bartels*, A.B. Brinkman, *S. Tajbakhsh*[#], H.G. Stunnenberg[#] (2013). Dynamic binding of RBPJ is determined by Notch signalling status. **Genes & Dev.** 27(9):1059-71*;* equal contribution; [#]co-corresponding.*

Yennek, S., M. Burute, M. Théry and *S. Tajbakhsh* (2014). Cell adhesion geometry regulates non-random DNA segregation and asymmetric cell fates in mouse skeletal muscle stem cells. **Cell Reports**, 7:961-970.

Comai*, G., R. Sambasivan*, S. Gopalakrishnan and *S. Tajbakhsh* (2014). Variations in the efficiency of lineage marking and ablation confound distinctions between myogenic cell populations. **Developmental Cell**, 31:654-67. **equal contribution.*

Gopalakrishnan, S., G. Comai, R. Sambasivan, A. Francou, RG Kelly and *S. Tajbakhsh* (2015). A cranial mesoderm origin for oesophagus striated muscle. **Developmental Cell**, 34: 694-704.

Baghdadi MB, Castel D, Machado L, Fukada S, Birk DE, Relaix F, *Tajbakhsh S** and Mourikis P* (2018). Notch/CollagenV/CalcR reciprocal signalling retains muscle stem cells in their niche. **Nature** doi: 10.1038/s41586-018-0144-9. *co-corresponding.

Baghdadi MB, J. Firmino, K. Soni, B. Evano, Di Girolamo D, Mourikis, P Castel D and *Tajbakhsh S* (2018). Notch-induced microRNA-708 orchestrates the quiescence to activation transition in muscle stem cells by regulating cell migration. **Cell Stem Cell**, 23:859-868. doi: 10.1016/j.stem.2018.09.017. Epub 2018 Nov 8.

Patent: F. Chrétien/M. Lathil/S. Tajbakhsh: Mouse and human stem cells survive for extended periods post-mortem. N° 2008-84 (23 dec 2008).

Invited Presentations/Conferences since 2014: ~*130* (*e.g.* Gordon, Keystone, EMBO, FASEB) 10 keynote speaker (ex. Stem Cells, Montreal, 2018; Gordon Muscle 2019); and *26* internat./national student courses.

Public Outreach: Public Event: Cellules Souches: Mythes & Réalités, IP, Paris (2016); Organized and participated in a MOOC on stem cells (https://www.coursera.org/learn/advances-stem-cells), and series of educational videos on skeletal muscle stem cells (https://www.youtube.com/watch?v=VBKC0mItPZs).

Short Biography: Shahragim Tajbakhsh (Institut Pasteur) has extensive experience in studying mouse skeletal muscle development and adult regeneration in vivo. ST was the first to show that skeletal muscle development is regionally specified by stem cells with distinct genetic programs leading to their proposal that this modular design in the embryo might impact on the regional susceptibility to disease. Genetic hierarchies and cell lineage analysis have been a central research topic. The Tajbakhsh laboratory is focused on identifying and characterising skeletal muscle stem cells and their daughters during embryonic and postnatal development to understand how this tissue is established, and how it regenerates during disease, after injury and during ageing. They examine the genetic networks that regulate myogenic stem cell emergence, and relate this lineage progression. They also investigate how stem/progenitor cells self-renew, essentially via symmetric vs. asymmetric cell divisions, and how the stem cell niche is defined.
Lab URL: https://research.pasteur.fr/en/team/stem-cells-and-development/