

BIOGRAPHICAL SKETCH

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NAME Sharon Gerecht		POSITION TITLE Assistant Professor	
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EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Technion-Israel Inst. Of Technology, Haifa, Israel	B.A.	1994	Biology
Tel-Aviv University, Tel-Aviv, Israel	M.Sc.	1999	Medical Sciences
Technion-Israel Inst. Of Technology, Haifa, Israel	Ph.D.	2004	Biotechnology
Technion-Israel Inst. Of Technology, Haifa, Israel	Postdoctoral	2004	Medicine
MIT- Massachusetts Inst. Of Technology, Cambridge	Postdoctoral	2004	Bioengineering

Positions and Employment

1994-1996 Head of Clinical Laboratory, Professional Officer, Medicine Corp, IDF.
 1996-1997 Head of Plant Tissue Culture Laboratory, Ben Zur Nurseries & Laboratory Ltd.
 1997-1999 M.Sc. student, Tel-Aviv University Medicine faculty
 1999-2000 Research Assistant, *In-Sight* Biotechnology Company Ltd.
 2000- 2004 Ph.D. student, Technion – Biotechnology interdisciplinary Unit
 2004 Postdoctoral Research Associate, Technion, Haifa, Israel.
 2004 Postdoctoral Associate, M.I.T., Cambridge, MA
 2005- 2007 Postdoctoral Fellow, M.I.T., Cambridge, MA; Technical coordinator of human embryonic stem cell laboratory
 2007 Assistant Professor, Chemical and Biomolecular Engineering, Johns Hopkins University
 2007 Member of the Howard Hughes Medical Institute graduate training program, The Johns Hopkins University
 2007 Member of the Johns Hopkins Vascular Medicine Initiative.

Award and Honors

1998-1999 Tel Aviv University, Sackler Faculty of Medicine, Graduate School, Merit Award
 2001-2003 Technion- Israel Institute of Technology, Graduate School, Merit Award
 2004 European Science Foundation, Cellular and Molecular Basis of Regeneration, Euresco Conferences Award
 2005-2007 Juvenile Diabetes Research Foundation, Postdoctoral Fellowship Award
 2006 Engineering Conferences International, The 10th conference on Cell Culture Engineering, Conference Award
 2007 Keystone Symposia Scholarship, Stem Cell Interactions with their Microenvironmental Niche

Original Contributions

- Zemel R, **Gerecht S**, Greif H, Bachmatove L, Birk Y, Golan-Goldehirsh A, Kunin M, Berdichevsky Y, Benhar I and Tur-Kaspa R. Cell transformation induced by hepatitis C virus NS3 serine protease. *J Viral Hep.* 2001; 8: 96-102.
- Shapira R, Zemel R, **Gerecht S**, Mor E, Ben-Ari Z, Zahavi I, Dinari G and Tur-Kaspa R. Transfusion-transmitted virus in liver-transplanted children. *Transplant Proc* 2001; 33: 2957-2958.
- Gerecht-Nir S**, Ziskind A, Cohen S and Itskovitz-Eldor J. Human embryonic stem cells as an in vitro model for human vascular development and the induction of vascular

- differentiation. *Lab Invest.* 2003; 83: 1811-1820.
4. **Gerecht-Nir S**, Cohen S and Itskovitz-Eldor J. Bioreactor cultivation enhances the efficiency of human embryoid body (hEB) formation and differentiation. *Biotechnol Bioeng.* 2004; 86: 493-502.
 5. Suss-Toby E, **Gerecht-Nir S**, Amit M, Manor D and Itskovitz-Eldor J. Derivation of a diploid human embryonic stem cell line from a mononuclear zygote. *Hum. Reprod.* 2004; 19: 670-675.
 6. Dang S, **Gerecht-Nir S**, Chen J, Itskovitz-Eldor J and Zandstra PW. Controlled scalable embryonic stem cell differentiation culture. *Stem Cells.* 2004; 22:275-282.
 7. Ginis I, Luo Y, Miura T, Thies S, Brandenberger R, **Gerecht-Nir S**, Amit M, Hoke A, Carpenter M, Itskovitz-Eldor J and Rao MS. Differences between human and mouse embryonic stem cells. *Dev. Biol.* 2004; 269:360-380.
 8. **Gerecht-Nir S**, Cohen S, Ziskind A and Itskovitz-Eldor J. 3-D porous alginate scaffolds provide a conducive environment for the generation of well vascularized embryoid bodies from human embryonic stem cells. *Biotechnol Bioeng.* 2004; 88:313-320.
 9. **Gerecht-Nir S**, Osenberg S, Nevo O, Ziskind A, Coleman R and Itskovitz-Eldor J. Vascular development in early human embryos and in teratoma derived from human embryonic stem cells. *Biol Reprod* 2004; 71: 2029-2036.
 10. Golan-Mashiach M, Dazard J-E, **Gerecht-Nir S**, Amariglio N, Fisher T, Jacob-Hirsch J, Bielora B, Osenberg S, Barad O, Getz G, Toren A, Rechavi G, Eldor-Itskovitz J, Domany E and Givol D. Design principle of gene expression used by human stem cells; implication for pluripotency. *FASEB J* 2005; 19: 147-149.
 11. **Gerecht-Nir S**, Dazard J-E, Golan-Mashiach M, Osenberg S, Botvinnik A, Amariglio N, Domany E, Rechavi G, Givol D and Itskovitz-Eldor J. Vascular gene expression and phenotypic correlation during differentiation of human embryonic stem cells. *Dev Dyn* 2005; 232:488-498.
 12. Segev H, Kenyagin-Karsenti D, Fishman B, **Gerecht-Nir S**, Ziskind A, Amit M, and Itskovitz-Eldor J. Molecular analysis of cardiomyocytes derived from human embryonic stem cells. *Dev. Growth Diff.* 2005; 47:295-306.
 13. Dolnikov K, Shilkrut M, Zeevi-Levin N, Danon D, **Gerecht-Nir S**, Itskovitz-Eldor J, Binah O. Functional properties of human embryonic stem cell-derived cardiomyocytes. *Ann N Y Acad Sci.* 2005; 1047: 66-75.
 14. Dolnikov K, Shilkrut M, Zeevi-Levin N, **Gerecht-Nir S**, Amit M, Asaf Danon, Itskovitz-Eldor J, Binah O. Functional properties of human embryonic stem cells-derived cardiomyocytes: Intracellular Ca_2^+ handling and the role of sarcoplasmic reticulum in the contraction. *Stem Cells.* 2006; 24:236-245.
 15. Leor J, **Gerech S**, Cohen S, Miller L, Holbova R, Ziskind A, Shachar M, Feinberg M.S, Guetta E, Itskovitz-Eldor J. Human embryonic stem cells are not guided to form new myocardium by transplantation into normal or infarcted heart of athymic nude rat. *Heart.* 2007; doi:10.1136/hrt.2006.093161.
 16. Ferreira L, **Gerecht S**, Fuller J, Shieh HF, Vunjak-Novakovic G, Langer L. Bioactive hydrogel scaffolds for controllable vascular differentiation of human embryonic stem cells. *Biomaterials.* 2007; 28:2706-2717.
 17. Figallo E*, Cannizzaro C*, **Gerecht S***, Burdick JA, Langer R, Elvassor N, Vunjak-Novakovic G. Microbioreactor arrays for controlling cellular microenvironments. *Lab Chip.* Special issue on Cell and Tissue Engineering in Microsystems. 2007; 7: 710 - 719
 18. **Gerecht S**, Burdick JA, Ferreira LS, Townsend SA, Langer R, and Vunjak-Novakovic G. Hyaluronic acid hydrogel for controlled self-renewal and differentiation of human embryonic stem cells. *Proc Natl Acad Sci U S A.* 2007; 104:11298-11303.
 19. Ferreira L, **Gerecht S**, Shieh H, Watson, N, Rupnick, M.A. Dallabrida, S.M Vunjak-Novakovic G, Langer R. Vascular progenitor cells isolated from human embryonic stem cells give rise to endothelial and smooth muscle-like cells and form vascular network *in vivo*. *Circ. Res.* 2007;101:286-294.
 20. **Gerecht S***, Bettinger* CJ, Zhang Z, Borenstein J, Vunjak-Novakovic G, Langer R. The effect of actin disrupting agents on contact guidance of human embryonic stem cells. *Biomaterials.* 2007; 28:4068-4077.

Principal Investigator/Program Director (Last, First, Middle): Gerecht, Sharon

21. **Gerecht S**, Townsend SA, Pressler H, Zhu H, Nijst C.L.E, Broggeman J, Nichol J, Langer R. A porous photocurable bioelastomer for cell encapsulation and culture. *Biomaterials*. doi:10.1016/j.biomaterials.2007.07.039.