

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow the sample format for each person. **DO NOT EXCEED FOUR PAGES.**

| | | | |
|---|---------------------------|---------------------------------------|----------------|
| NAME Jake A. Kushner | | POSITION TITLE Assistant Professor | |
| eRA COMMONS USER NAME | | | |
| EDUCATION/TRAINING (<i>Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.</i>) | | | |
| INSTITUTION AND LOCATION | DEGREE (if applicable) | YEAR(s) | FIELD OF STUDY |
| University of California at Berkeley | B.A. | 1987 | Biochemistry |
| Albany Medical College | M.D. | 1994 | |

Please refer to the application instructions in order to complete sections A, B, and C of the Biographical Sketch.

A. Positions and Honors.**Positions and Employment**

| | |
|--------------|--|
| 1994-1997 | Pediatrics Resident, Rhode Island Hospital, Brown University |
| 1997-2000 | Clinical Fellow in Pediatric Endocrinology, Children's Hospital, Boston |
| 2000-2003 | Assistant in Medicine, Children's Hospital, Boston |
| 2000-2003 | Instructor in Medicine, Department of Pediatrics, Harvard Medical School |
| 2002-2003 | Research Associate, Molecular and Cellular Physiology Division, Joslin Diabetes Center |
| 2004-present | Assistant Professor of Pediatrics, University of Pennsylvania School of Medicine |
| 2004-present | Staff Physician, Children's Hospital of Philadelphia |
| 2004-present | Faculty, Cell and Molecular Biology Graduate Group, Cell Biology and Physiology Program, University of Pennsylvania School of Medicine |

Other Experience and Professional Memberships

| | |
|--------------|---|
| 1994-present | American Association for the Advancement of Science |
| 2000-present | Lawson Wilkins Pediatric Endocrine Society |
| 2004-present | American Diabetes Association |

Honors

| | |
|-----------|---|
| 1999-2000 | Lawson Wilkins Pediatric Endocrinology Society, Eli Lilly Fellowship |
| 2001-2003 | Juvenile Diabetes Research Foundation International Postdoctoral Research Fellowship |
| 2003-2005 | Charles H. Hood Foundation Child Health Research Grant |
| 2003-2008 | NIH Mentored Clinical Scientist Career Development Award |
| 2003-2005 | Lawson Wilkins Pediatric Endocrinology Society Clinical Scholar Award |
| 2003 | National Institutes of Health (NIH) Pediatric Research Loan Repayment Program |
| 2005-2007 | Basil O'Connor Career Development Award |
| 2005 | National Institutes of Health (NIH) Pediatric Research Loan Repayment Program (competitive renewal) |
| 2007 | National Institutes of Health (NIH) Pediatric Research Loan Repayment Program (competitive renewal) |

B. Selected peer-reviewed publications (in chronological order).

1. Friedman JS, Cofer CL, Anderson CL, Kushner JA, Gray PP, Chapman GE, Stuart MC, Lazarus L, Shine J, Kushner PJ (1989). High expression in mammalian cells without amplification Bio/Technology 7(47): 359-362
2. Zhou Q-Y, Grandy DK, Thambi L, Kushner JA, Van, T, Huber M, Cone R, Pribnow D, Salon J, Bunzow JR, Olivier C (1990). Cloning and expression of human and rat D1 dopamine receptors Nature 347(6288): 76-80
3. Mellon SH, Kushner JA, Vaisse C (1991). Expression and regulation of adrenodoxin and P450scc mRNA in rodent tissues DNA and Cell Biology 10(5): 339-347
4. Kushner JA, Ye J, Schubert M, Burks DJ, Dow MA, Flint CL, Dutta S, Wright CVE, Montminy MR, White MF (2002). Pdx1 restores β cell function in Irs2 knockout mice The Journal of Clinical Investigation 109(9436): 1193-1200
5. Schubert M, Brazil DP, Burks DJ, Kushner JA, Ye J, Flint CL, Farhang-Fallah J, Dikkes P, Warot XM, Rio C, Corfas G, White MF (2003). Insulin receptor substrate-2 deficiency impairs brain growth and promotes tau phosphorylation The Journal of Neuroscience 23(18): 7084-7092
6. Kushner JA, Haj HG, Klamann LD, Dow MA, Kahn BB, Neel BG, and White MF (2004). Islet-sparing effects of protein tyrosine phosphatase-1b deficiency delays onset of diabetes in IRS2 knockout mice Diabetes 53(1): 61-66
7. Lin X, Taguchi A, Park S, Kushner JA, Li F, Li Y, White MF (2004). Dysregulation of insulin receptor substrate 2 in beta-cells and brain causes obesity and diabetes The Journal of Clinical Investigation 114(7): 908-916
8. Pawlak DB, Kushner JA, Ludwig DS (2004). Effects of dietary glycemic index on adiposity, glucose homeostasis and plasma lipids in an animal model The Lancet 364(9436): 778-85
9. Teta M, Long SY, Wartschow LM, Rankin MM, Kushner JA (2005). Very slow turnover of beta-cells in aged adult mice Diabetes 54(9): 2557-67
10. Kushner JA, Simpson L, Wartschow LM, Guo S, Rankin MM, Parsons R, and White MF (2005). Phosphatase and tensin homolog regulation of islet growth and glucose homeostasis Journal of Biological Chemistry 280(47): 39388-93
11. Yi X, Schubert M, Peachey NS, Suzuma K, Burks DS, Kushner JA, Suzuma I, Cahill C, Flint CL, Dow MA, Leshan RL, King GL, White MF (2005). Insulin receptor substrate 2 is essential for maturation and survival of photoreceptor cells The Journal of Neuroscience 25(7)
12. Kushner JA, Ciemerych MA, Sicinska E, Wartschow LM, Teta M, Long SY, Sicinski P, White MF (2005). Cyclins D2 and D1 are essential for postnatal pancreatic beta-cell growth Molecular and Cellular Biology 25(9436): 3752-3762
13. Sherry NA, Kushner JA, Glandt M, Kitamura T, Brillantes A, Herold KC (2006). Effects of autoimmunity and immune therapy on beta-cell turnover in type 1 diabetes Diabetes 55(12): 3238-45
14. Kushner JA (2006). Beta-cell growth: an unusual paradigm of organogenesis that is cyclin D2/Cdk4 dependent Cell Cycle 5(3)
15. Sherry NA, Chen W, Kushner JA, Glandt M, Tang Q, Tsai S, Santamaria P, Bluestone JA, Brillantes AB, Herold KA (2007). Exendin-4 improves reversal of diabetes in NOD mice treated with anti-CD3 mAb by enhancing recovery of beta-cells Endocrinology 148(44): 5136-44
16. Kiel MJ, He S, Ashkenazi R, Gentry SN, Teta M, Kushner JA, Jackson TL, Morrison SJ (2007). Hematopoietic stem cells do not asymmetrically segregate chromosomes or retain bromodeoxyuridine Nature 449(7159): 238-42
17. Ablamunits V, Sherry NA, Kushner JA, Herold KC (2007). Autoimmunity and beta cell regeneration in mouse and human type 1 diabetes: the peace is not enough. Annals of the NY Academy of Science 1103: 19-32
18. Teta M, Rankin MM, Long SY, Stein GM, Kushner JA (2007). Growth and regeneration of adult beta cells does not involve specialized progenitors Developmental Cell 12(5): 817-26
19. Podcheko A, Northcott P, Bikopoulos G, Lee A, Bommareddy SR, Kushner JA, Farhang-Fallah J, Rozakis-Adcock M (2007). Identification of a SD-40 repeat-containing isoform of PHIP as a novel regulator of beta-cell growth and survival Molecular and Cellular Biology 27(18): 6484-96

C. Research Support

Ongoing Research Support

1R03DK078546-01 Kushner 07/01/07-06/30/09

NIH

p130 Regulation of Islet Growth

Small grant program for NIDDK K08/K23 recipients.

Role: PI

26-2007-925 Kushner 09/01/07-08/31/09

Juvenile Diabetes Research Foundation

BMPs: Powerful mitogenic signals that govern beta cell proliferation

Role: PI

1-2006-197 Kushner 04/01/06-03/31/09

Juvenile Diabetes Research Foundation

Beta Cell Regeneration in Aged Mice

Role: PI

7 K08 DK064101-02 Jake A Kushner MD 01/01/04-09/29/08

NIH NIDDK

Cyclin D2 regulation of islet growth

K08: Clinical Scientist Career Development Award

Role: PI

Completed Research Support

Kushner 07/01/07-06/30/08

Children's Hospital of Philadelphia, Foerderer - Murray New Investigator Grant

BMPs - a novel drug target to regenerate beta cells in diabetes

Role: PI

Jake Kushner 03/01/05-02/28/07

March of Dimes

Cell Cycle Regulation Of Islet Growth

Basil O'Connor Career Development Award

Role: PI

Jake Kushner 07/01/03-06/30/05

Lawson Wilkins Pediatric Endocrinology Society Clinical Scholar Award

PTEN regulation of glucose homeostasis and islet growth

Role: PI

Jake Kushner 01/01/03-12/31/04

Charles H. Hood Foundation Child Health Research Grant

Cell cycle regulation of islet growth

Role: PI

Jake Kushner 07/01/01-06/30/03
Juvenile Diabetes Research Foundation International
IRS-2 and PDX-1 dependent regulation of endocrine pancreas development and function
Role: PI

Kushner 05/15/07-03/31/08
University of Pennsylvania Diabetes Endocrine Research Core Pilot and Feasibility Grant Application
Mitogenic signals that govern beta cell proliferation
(Role in grant: PI, Pilot and Feasibility Grant Application)
Role: PI

DK02024 Joseph A Majzoub 10/01/02-09/30/03
NIH NIDDK
PTEN regulation of glucose homeostasis and islet proliferation fellowship
Recipient, K12: Institutional Mentored Clinical Scientist Career Development Award. Grant awarded to
Children's Hospital, Boston and Joslin Diabetes Center to train pediatric endocrinologists in diabetes research.
Role: Recipient