

BIOGRAPHICAL SKETCH

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NAME Knapik, Ela W.		POSITION TITLE Associate Professor	
eRA COMMONS USER NAME (credential, e.g., agency login) KNAPIKE			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Jagiellonian University, Nicolas Copernicus School of Medicine, Krakow, Poland	MD	1987	Medicine
Colorado State University, Fort Collins	Postdoctoral Fellow	1990-1991	Neurogenetics
Massachusetts General Hospital and Harvard Medical School, Boston, MA	Postdoctoral Fellow	1991-1998	Genetics, Genomics

A. Positions and Honors

Positions and Employment

- 1989 Research Associate, Department of Molecular Cell Biology, Max-Planck-Institute of Biophysical Chemistry, Goettingen, Germany, in the laboratory of Professor Peter Gruss
- 1990-1991 Postdoctoral Fellow, Department of Anatomy and Neurobiology, Colorado State University, Fort Collins, CO under the direction of Professors Toomas Neuman and Howard Nornes
- 1991-1998 Research Fellow, CVRC, Department of Medicine, Harvard Medical School, Boston, MA under the direction of Professors Mark C. Fishman and Howard J. Jacob
- 1991-1998 Research Fellow in Medicine, Cardiovascular Research Center, Massachusetts General Hospital, Boston, MA
- 1998-2003 Director, Zebrafish Genetics Laboratory, Head of the Zebrafish Facilities, Institute of Mammalian Genetics, GSF-National Research Center for Environment and Health, Munich Germany
- 2003-2004 Group leader, Zebrafish Genetics Group, Developmental Biology, Institute Biology 1, University of Freiburg, Freiburg, Germany
- 2004-pres Associate Professor of Medicine, Division of Genetic Medicine and Department of Cell and Developmental Biology, Vanderbilt University, Nashville, TN
- 2006-pres Member, John F. Kennedy Center for Research on Human Development, Vanderbilt University, Nashville, TN

Honors

- 1998-2005 Peer Reviewer for Funding Agencies in Europe (1998 – 2005):
Wellcome Trust (UK)
German Human Genome Project (BMBF, *German Ministry of Science and Education*)
National European funding agencies (Netherlands, U.K., Germany, Austria)
- 1999 Organizer, Annual Meeting of German Genetic Society, Developmental Genetics, Munich/Neuherberg, Germany
- 2000 Scholarship to attend the Positional Cloning Course in CSH, New York, USA
- 2004-Pres Peer Reviewer for Funding Agencies in the USA:
National Science Foundation, USA, 2007
NIH/NIDCR Special Emphasis Panel/Scientific Review Group, 2008

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

- Nornes HO, Dressler GR, Knapik EW, Deutsch U, Gruss P. (1990) Spatially and temporally restricted expression of Pax2 during murine neurogenesis. *Development* 109:797-809.
- Neuman T, Keen A, Knapik E, Shain D, Ross M, Nornes HO, Zuber MX. (1992) ME1 and GE1: Basic helix-loop-helix transcription factors expressed at high levels in the developing nervous system and in morphogenetically active regions. *European Journal of Neuroscience* 5:311-318.
- Knapik E.W., Goodman A, Atkinson OS, Roberts CT, Shiozawa M, Sim CU, Weksler-Zangen S, Troliet MR, Futrell C, Innes BA, Koike G, McLaughlin MG, Pierre L, Simon JS, Villalonga E, Roy M, Chiang PW, Fishman MC, Driever W, Jacob HJ. (1996) A reference cross DNA panel for zebrafish (*Danio rerio*) anchored with simple sequence length polymorphisms. *Development* 123:451-460.
- Foenzler D, Her H, Knapik E.W, Clark M, Lehrach H, Postlethwait JH, Zon LI, Beier DR. (1998). Gene mapping in zebrafish using single-strand conformation polymorphism (SSCP) analysis. *Genomics* 51:216-222.
- Postlethwait JH, Yan YL, Gates MA, Horne S, Amores A, Brownlie A, Donovan A, Egan ES, Force A, Gong Z, Goutel C, Fritz A, Kelsh R, Knapik E, Liao E, Paw B, Ransom D, et al. (1998). Vertebrate genome evolution and the zebrafish gene map. *Nature Genetics* 18:345-349.
- Knapik E.W., Goodman A, Ekker M, Chevrette M, Delgado J, Neuhaus S, Shimoda N, Driever W, Fishman MC, Jacob HJ. (1998). A microsatellite genetic linkage map for zebrafish (*Danio rerio*). *Nature Genetics* 18:339-344.
- Shimoda N, Knapik E.W, Ziniti J, Sim C, Yamada E, Kaplan S, Jackson D, de Sauvage F, Jacob HJ, and Fishman MC. (1999). Zebrafish genetic map with 2000 microsatellite markers. *Genomics* 58:219-232.
- Chevrette M, Joly L, Tellis P, Knapik E.W, Miles J, Fishman MC, and Ekker M. (2000) Characterization of mouse/zebrafish somatic cell hybrid panel. *Genomics* 64:119-126.
- Knapik E.W. (2000) ENU mutagenesis in zebrafish – from genes to complex diseases. *Mammalian Genome* 11, 511-519.
- Sachdev SW, Dietz U, Oshima Y, Lang M, Knapik E.W., Hiraki Y, Shukunami C. (2001) Sequence analysis of zebrafish *chondromodulin-1* and expression profile in the notochord and chondrogenic regions during cartilage morphogenesis. *Mechanisms of Development*, 105:157-162.
- Dethleffsen K, Heinrich G, Lauth M, Knapik E.W. and M. Meyer (2003) Insert-containing neurotrophins in teleost fish and their relationship to nerve growth factor. *Molecular and Cellular Neuroscience*, 24, 380-394.
- Holzschuh J, Barrallo-Gimeno A, Ettl AK, Knapik E.W. and W. Driever (2003) Noradrenergic neurons in the zebrafish hindbrain are induced by retinoic acid and require *tfap2a* for expression of neurotransmitter phenotype. *Development*, 130:5741-5754.
- Barrallo-Gimeno A, Hotzschuh J, Driever W, and E.W. Knapik (2004) Neural crest survival and differentiation in zebrafish depends on *mont blanc/tfap-2a* gene function. *Development*, 131:1463-1477.
- Montero M, Lang MR, Sachdev WS, De La Guardia A, Steward R, Knappmeyer C, Hatzopoulos AK and EW Knapik (2006) The regulatory mutation *mother superior* ablates *foxd3* activity in neural crest progenitor cells and depletes neural crest derivatives in zebrafish. *Developmental Dynamics*, 235, 3199-3212.
- Müller I, Knapik EW and AK Hatzopoulos (2006) Expression of the protein related to Dan and Cerberus gene - *prdc* - during eye, pharyngeal arch, somite and swim bladder development in zebrafish. *Developmental Dynamics*, 235:2881-2888.
- Lang MR, Lapierre LA, Frotscher M, Goldenring JR and EW Knapik (2006) Secretory COPII coat component Sec23a is essential for craniofacial chondrocyte maturation. *Nature Genetics*, 38:1198-1203.
- Bradley KM, Elmore JB, Breyer JP, Yaspan BL, Jessen JR, Knapik E.W. and JR. Smith (2007) A major zebrafish polymorphism resource for genetic mapping. *Genome Biology* 8, R55.
- Granero-Moltó F, Sarmah S, O'Rear L, Spagnoli A, Abrahamson D, Saus J, Hudson BG*) and E.W. Knapik *) (2008) Goodpasture Antigen Binding Protein and its spliced variant, Ceramide Transfer protein have different functions in the modulation of apoptosis during zebrafish development. *Journal of Biological Chemistry*, 283: 20495-504.

C. Research Support

Ongoing Research Support

R01 1R01DE018477 Knapik (PI)

8/1/07–7/30/11

NIH/NIDCR

The Role of the Secretory Pathway in Craniofacial Morphogenesis

The goal of this project is to define the role of Sec23a and Sec23b secretory coat proteins in chondrocyte differentiation and maturation using genetic, molecular and biochemical approaches in zebrafish, yeast and mammalian cell culture.

Completed Research Support

None