Matthew A. Berezuk, Ph.D.

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ACADEMIC APPOINTMENTS

2007-Present Professor, Department of Biology & Chemistry, Azusa Pacific University, Azusa, CA. Courses Taught: Biomolecular Chemistry; Biomolecular Metabolism; Physical Biochemistry; Principles of Biochemistry; Cellular Biology; General Chemistry II; Introduction to Organic and Biochemistry.

2006-2007 Visiting Assistant Professor, Department of Biology, Lincoln University, Lincoln University, PA. Courses Taught: Cellular and Molecular Biology; Developmental Biology; Immunology; General Biology I; Human Biology.

EDUCATION

2000-2005 The Johns Hopkins University, Baltimore, MD
Ph.D., 2005, Cellular, Molecular, Developmental Biology and Biophysics
Primary Investigator: Dr. Trina A. Schroer
Thesis: "Analysis of the *in vitro* activity and cargo binding characteristics of kinesin-2."

1993-1997 Valparaiso University, Valparaiso, IN
B.S., 1997, Cum Laude, Biology, Chemistry Minor

POSTDOCTORAL TRAINING

2005-2006 Carnegie Institution of Washington, Department of Embryology, Baltimore, MD
Primary Investigator: Dr. Yixian Zheng
Mechanisms of spindle assembly/disassembly through temporal organization of microtubule motors, nucleators and associated factors.

RELATED RESEARCH EXPERIENCE

1998-2000 University of Colorado Health Sciences Center, Department of Pathology, Denver, CO
Primary Investigators: Dr. Wilbur A. Franklin and Dr. Marileila Varella-Garcia
Assessment of chromosomal aneuploidy by fluorescence *in situ* hybridization (FISH) and loss of heterozygosity in human cancers.

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PROFESSIONAL MEMBERSHIPS

The American Chemical Society
The American Association for Advancement of Science.
The American Society for Cell Biology.

PUBLICATIONS

Drisko, C, Berezuk, MA. Rise of the (Molecular) Machines. *Austin Biochem.* 2018; 3(1): 1018.

Tenney A, Price M, Macatangay J, Hatt D, Kline T, Berezuk MA. Partial characterization of an interaction between kinesin associated protein 3 (KAP3) of kinesin-2 and the actin cytoskeleton. *Austin Biochem.* 2016; 1(1): 1003.

Berezuk, MA, Schroer, TA. Dynactin enhances the processivity of kinesin-2. *Traffic*. Vol. 8 (2007) pp.124-129.

Berezuk, MA, Schroer, TA. Fractionation and characterization of kinesin II species in vertebrate brain. *Traffic*. Vol. 5 (2004) pp. 503-513.

Berezuk, MA, West, J, Varella-Garcia, M, Franklin, WA. Adjusting interphase FISH results in epithelial tissue sections to whole cell complement. *Anal. Quant. Cytol. Histol*. Vol. 23 (2001) pp. 93-100.

MANUSCRIPTS IN PREPARATION

Le, H, Villegas, D, Macatangay, J, Morales, C, Berezuk, MA. Overexpression of GFP-tagged KAP3 in cell culture shows specific subcellular localization patterns and effects on the secretory system.

SELECTED ABSTRACTS FOR PROFESSIONAL AND ACADEMIC MEETINGS

Villegas, D, Macatangay, J, Morales, C, Berezuk, MA. Characterization of localization patterns and abnormal cellular morphologies observed in COS7 cells overexpressing GFP-tagged Kinesin Associated Protein 3 (KAP3). *Mol. Biol. Cell*. Vol. 29 (2018) pp. 3063 (Abstract P1143). (American Society for Cell Biology – European Molecular Biology Organization 2018 Meeting).

Macatangay, J, Morales, C, Berezuk, MA. Overexpression of GFP-tagged KAP3 in cell culture shows specific subcellular localization patterns and effects on the actin cytoskeleton. *Mol. Biol. Cell*. Vol. 26 (2015) pp. 4523. (American Society for Cell Biology Meeting, 2015).

Kline, T, Hatt, D, Berezuk, MA. The effects of KAP3 of kinein-2 on endosome localization and the organization of the actin cytoskeleton in cell culture. (West Coast Biological Sciences Undergraduate Research Conference, 2014).

Castro, J, Gabriyelyan, H, Berezuk, MA. In vitro analysis of the interaction between KAP3 of kinesin-2 and actin. (West Coast Biological Sciences Undergraduate Research Conference, 2014).

Kline, T, Hatt, D, Berezuk, MA. Analysis of the effects of KAP3-GFP overexpression in cell culture. (West Coast Biological Sciences Undergraduate Research Conference, 2013).

Hatt, D, Kline, T, Berezuk, MA. Cloning of KAP3 of kinesin-2 into a GFP vector for cell culture analysis. (West Coast Biological Sciences Undergraduate Research Conference, 2013).

Tenney, A, Berezuk, MA. In vitro analysis of the interaction between KAP3 of kinesin-2 and actin. (West Coast Biological Sciences Undergraduate Research Conference, 2012).

Hatt, D, Kline, T, Berezuk, MA. The effects of KAP3 of kinesin-2 on the organization and remodeling of the actin cytoskeleton in cell culture. (West Coast Biological Sciences Undergraduate Research Conference, 2012).

Tenney, A, Berezuk, MA. The identification and mapping of interactions between KAP3 of kinesin 2 and the dynactin complex. (Beta Beta Beta National Biological Honor Society Pacific District Convention, 2011).

McCourt, J, Berezuk, MA. Affinity purification of native motors for use in *in vitro* activity assays. (Beta Beta Beta National Biological Honor Society Pacific District Convention, 2011).

McCourt, J, Berezuk, MA. Analysis of kinesin motor complement in bovine liver. (Southern California Conferences for Undergraduate Research, 2010).

Vanderlaan, M, Berezuk, MA. Analyzing the interaction between KAP3 of kinesin-2 and actin in cell culture. (West Coast Biological Sciences Undergraduate Research Conference, 2010).

Zhang, J-Z, Berezuk, MA. Biochemical analysis of interactions between KAP3 of kinesin-2 and actin. (West Coast Biological Sciences Undergraduate Research Conference, 2009).

Berezuk, MA, Schroer, TA. Mapping interactions between the KAP3 subunit of kinesin II and dynactin. *Mol. Biol. Cell*. Vol. 15 (2004) pp. 279a. (American Society for Cell Biology Meeting, 2004).

Berezuk, MA, Schroer, TA. Processivity enhancement of kinesin II by dynactin. *Mol. Biol. Cell*. Vol. 14 (2003) pp. 427a. (American Society for Cell Biology Meeting, 2003).

Berezuk, MA, Schroer, TA. Characterization of Native Kinesin II Purified from Chick Embryo Brain. *Mol. Biol. Cell*. Vol. 13 (2002) pp. 323a. (American Society for Cell Biology Meeting, 2002).

Franklin, WA, Berezuk, MA, Anderson, MA, Mault, J, Pomeranz, M, Wiest, J and Varella-Garcia, M. P53 mutation is associated with multiple copies of mutant p53 allele and with chromosomal instability in non-small cell lung carcinoma (NSCLC). *Lung Cancer*. Vol. 29 (2000) pp. 177-178. (International Association for the Study of Lung Cancer Meeting, 2000)

Berezuk, MA, West, J, Varella-Garcia, M, Franklin, WA. A numerically fit model equation for adjusting fluorescence *in situ* hybridization (FISH) signal counts in tissue sections to *in vivo* ploidy for epithelial cells. *Proc. Amer. Assn. Cancer Res*.Vol. 41 (2000) pp. 186. (American Association for Cancer Research Meeting, 2000).

Franklin, WA, Berezuk, MA, Varella-Garcia, M. Chromosomal instability in NSCLC reflected by two color FISH for eighteen α satellite markers. *Proc. Amer. Assn. Cancer Res*. Vol. 40 (1999) pp. 189. (American Association for Cancer Research Meeting, 1999).

GRANTS

APU Faculty Research Council Grant. "Elucidating the mechanisms of kinesin-2 mediated sub-cellular trafficking and its effects on cellular morphology ", 2019.

Scholarly Undergraduate Research Experience (SURE) Grant Program. "Overexpression of GFP-tagged KAP3 in cell culture shows specific subcellular localization patterns and effects on cell morphology involving disruption of the actin cytoskeleton", 2016.

APU Faculty Research Council Grant. "Identification and characterization of kinesin-2 cargo associating proteins", 2015.

APU Faculty Research Council Grant. "The effects of KAP3 of kinesin-2 on cellular morphology and endosome localization in culture", 2013.

APU Faculty Research Council Grant. "*In vitro* analysis of the interaction between KAP3 of kinesin-2 and actin by direct binding studies and cell culture", 2012.

Tri-Beta National Biological Honor Society Grant. "Affinity purification of native motors for use in *in vitro* activity assays", 2010.

APU Faculty Research Council Grant. "Effects of KAP3 of kinesin-2 on the organization and remodeling of the actin cytoskeleton during wound healing in cell culture", 2010.

Turner Biosystems Instruments Grant Program. "Modulus Single Tube Luminometer", 2009.