

CURRICULUM VITAE

BIOGRAPHICAL

Name: MEIR ARIDOR

Home Address: 107 Wilmar Dr.
Pittsburgh PA 15238

Birthplace: Tel Aviv, Israel

Citizenship: USA

Business Address: Department of Cell Biology
University of Pittsburgh School of Medicine
3500 Terrace Street
S327 BST
Pittsburgh, PA 15261

Business Phone: (412) 624-1970

Business Fax: (412) 648-8330

E-mail Address: aridor+@pitt.edu

EDUCATION AND TRAINING

UNDERGRADUATE:

<i>Dates Attended</i>	<i>Name and Location of Institution</i>	<i>Degree Received and Year</i>	<i>Major Subject</i>
1983-1987	Tel Aviv University Tel Aviv, Israel	B.Sc., 1987	Biology

GRADUATE:

<i>Dates Attended</i>	<i>Name and Location of Institution</i>		<i>Major Subject</i>
1987-1989	Weizmann Institute of Science Rehovot, Israel	M.Sc 1990.	Cell Biology-immunology
1989-1993	Weizmann Institute of science Rehovot, Israel,	Ph.D. 1994	Cell Biology-Immunology (Mentor: Dr. R. Sagi-Eisenberg)

POST-GRADUATE:

<i>Dates Attended</i>	<i>Name and Location of Institution</i>	<i>Major Subject</i>
1993-1998	The Scripps Research Institute	Cell Biology Mentor: Dr. W. E. Balch Intracellular transport

APPOINTMENTS AND POSITIONS

ACADEMIC:

<i>Years Inclusive</i>	<i>Name and Location of Institution of Organization</i>	<i>Rank/title</i>
1998 - 2000	The Scripps Research Institute Department of Cell Biology	Senior Research Associate
2000 - 2007	Department of Cell Biology and Physiology University of Pittsburgh School of Medicine	Assistant Professor
2007-	Department of Cell Biology University of Pittsburgh School of Medicine	Associate Professor with Tenure

HONORS

<i>Title of Award,</i>	<i>Year(s)</i>
<u>The Edward Mallinckrodt, Jr. Foundation.</u> (Young investigator award)	2001-2004
<u>Alon Career Award</u> Government sponsored young investigator career award to establish a new research program in Israel. (Award declined).	2000-2003
<u>Human Frontier Science Program Organization (HFSP)</u> A two-year post doctoral fellowship	1994 -1996
<u>European Molecular Biology Organization (EMBO)</u> A two-year post doctoral fellowship	1993-1995
<u>The Juvenile Diabetes foundation</u> Fellowship to visit the NIDDK at the National Institutes of Health (USA.)	1987
<u>Sam Cohen Predoctoral fellowship</u>	1990-1993

PUBLICATIONS

Primary Research Papers

1. M. Adamo, J. Shemer, **M. Aridor**, J. Dixon, N. Carswell, J.S. Bhatena, E.O. Michaelis and D. Leroith. (1989) Liver Insulin Receptor Tyrosine Kinase Activity in a Rat Model of Type 2 Diabetes Mellitus and Obesity.
J. Nutrition **119**: 484-489.
2. **M. Aridor**, L.M. Traub and R. Sagi-Eisenberg. (1990) Exocytosis in Mast Cells by Basic Secretagogues: Evidence for Direct Activation of GTP-Binding Proteins.
J. Cell Biol. **111**: 909-917.
3. **M. Aridor** and R. Sagi-Eisenberg. (1990) Neomycin is Potent Secretagogue of Mast Cells that Directly Activates a GTP-Binding Protein Involved in Exocytosis.
J. Cell Biol. **111**: 2885-2891.
4. **M. Aridor**, G. Rajmlevich, M.A. Beaven and R. Sagi-Eisenberg (1993) Activation of Exocytosis by the Heterotrimeric G Protein G_{i3}.
Science, **262**: 1569-1572.
5. S. Bannykh, **M. Aridor**, H. Plutner, T. Rowe and W.E. Balch (1995) Regulated export of cargo from endoplasmic reticulum of mammalian cells.
Cold Spring Harbor Lab. Press **60**:127-137.
6. **M. Aridor**, S.I. Bannykh, T. Rowe, and W.E. Balch (1995) Sequential coupling between COPII and COPI vesicle coats in endoplasmic reticulum (ER) to Golgi transport.
J. Cell Biol., **131**: 875-893.
7. T. Rowe, **M. Aridor**, M. McCaffery, H. Plutner and W.E. Balch (1996) COPII vesicles derived from mammalian endoplasmic reticulum (ER) microsomes recruit COPI.
J. Cell Biol. **135**:895-911.
8. L.M. Traub, S.I. Bannykh, J.E. Rodel, **M. Aridor**, W.E. Balch and S. Kornfeld (1996) AP-2-containing clathrin coats assemble on mature lysosomes.
J. Cell Biol. **135**:1801-1814.
9. **Aridor M.** J. Weissman, S. Bannykh, C. Nuoffer and W. E. Balch (1998) Cargo Selection by the COPII Budding Machinery during Export from the ER.
J. Cell Biol. **141** 61-70
10. **M. Aridor**, S. I. Bannykh, T. Rowe and W. E. Balch (1999) Cargo can Modulate COPII Vesicle Formation from the Endoplasmic reticulum.
J. Biol. Chem. **274** 4389-4399
11. **M. Aridor** and W. E. Balch (2000) Kinase signaling initiates COPII recruitment and Export from the Mammalian Endoplasmic Reticulum.
J. Biol. Chem, **275** 35673-35676

12. **M. Aridor**, K. N. Fish, S. I. Bannykh, J. T. Weissman, Roberts T. H., J. Lippincott Schwartz J. and W. E. Balch, (2001) The Sar1 GTPase coordinates biosynthetic cargo selection with Endoplasmic Reticulum Export Site Assembly.
J. Cell Biol. **152** 213-229
13. Huang M. Weissman JT, Beraud-Dufour S., Luan P., Wang, C., Chen W., **Aridor M.** Wilson IA, Balch WE. (2001) Crystal Structure of Sar1-GDP at 1.7 Å Resolution and the Role of the N-Terminus in ER export.
J. Cell Biol. 155:937-48.
14. P. Pathre, K. Shome, A. Blumental-Perry, A. Bielli, C.J. Haney, S Alber, S. Watkins, G. Romero, and **M. Aridor** (2003) Activation of Phospholipase D by the Small GTPase Sar1 Is Required to support COPII Assembly and ER Export.
EMBO J. 22: 4059-4069 (recommended in faculty 1000)
15. **Aridor M.**, Guzic, A.K., Bielli, A. and Kenneth N. Fish (2004) Endoplasmic Reticulum Export Site Formation and Function in Dendrites.
J. Neuroscience 24; 3770-3776.
16. Wakako Shimoi, Ichiko Ezawa, Koji Nakamoto, Shihoko Uesaki, Gavin Gabreski, **Meir Aridor**, Akitsugu Yamamoto, Masami Nagahama, Mitsuo Tagaya, and Katsuko Tani (2005) p125 Is Localized in Endoplasmic Reticulum Exit Sites and Involved in Their Organization.
J. Biol. Chem 280: 10141-8 (recommended in faculty 1000)
17. Kelly M. Weixel, Anna Blumental-Perry, Simon C. Watkins, **Meir Aridor**, and Ora A. Weisz. (2005) Distinct Golgi Populations of Phosphatidylinositol 4-Phosphate Regulated by Phosphatidylinositol 4-Kinases.
J. Biol. Chem 280:10501-8
18. Bielli A, C.J. Haney, G. Gabreski, S. C. Watkins, S. I. Bannykh and **M. Aridor** (2005) Regulation of Sar1 N-terminus by GTP Binding and Hydrolysis Promotes Membrane Deformation to Control COPII Vesicle Fission.
J. Cell Biol. 171. 919-924 (recommended in faculty 1000)
19. Hui Zhang, Bela Z. Schmidt, Fei Sun, Steven B. Condliffe, Robert T. Youker, Jeffrey L. Brodsky, **Meir Aridor** and Raymond A. Frizzell (2006) Cysteine String Protein monitors late steps in CFTR biogenesis
J. Biol. Chem. 281:11312-21.
20. A. Blumental-Perry, C.J. Haney, K.M. Weixel, S.C. Watkins, O.A. Weisz, and **M. Aridor** (2006). Phosphatidylinositol 4-Phosphate Formation at ER Exit Sites Regulates ER Export.
Developmental Cell 11, 671-682 (recommended in faculty 1000)
21. Takayuki Iinuma, Akiko Shiga, Koji Nakamoto, Matthew B. O'Brien, **Meir Aridor**, Nagisa Arimitsu, Mitsuo Tagaya, and Katsuko Tani (2007) Mammalian Sec16/p250 plays a role in membrane traffic from the endoplasmic reticulum.
J. Biol. Chem. 282(24):17632-9
22. Gunhild M. Mueller, Ossama B. Kashlan, James B. Bruns, Ahmad B. Maarouf, **Meir Aridor**, Thomas

- R. Kleyman and Rebecca P. Hughey (2007) Epithelial sodium channel (ENaC) exit from the endoplasmic reticulum is regulated by a signal within the carboxyl cytoplasmic domain of the α subunit
J. Biol. Chem. 282(46): 33475-83
23. Béla Z. Schmidt, Rebecca J. Watts, **Meir Aridor** and Raymond A. Frizzell (2009). Cysteine String Protein promotes proteasomal degradation of CFTR by increasing its interaction with CHIP and promoting CFTR ubiquitylation .
J Biol Chem. 13; 284(7): 4168-78.
24. **M. Aridor** and K. N. Fish (2009) Selective Targeting and Regulation of ER Exit Sites Supports Axon Development *Traffic* 10(11):1669-84.
25. Kimberly R. Long*, Yasunori Yamamoto*, Adam L. Baker, David Klinkenberg, Carolyn B. Coyne, Simon C. Watkins, James F. Conway and **Meir Aridor** (2010) Sar1 Assembly Regulates Membrane constriction and ER export.
J. Cell Biol. 12;190(1):115-28. (Cover story, recommended in Faculty 1000)
26. David Klinkenberg, Kimberly R. Long, Kuntala Shome, Simon C. Watkins and **Meir Aridor** (2014) A cascade of ER exit site assembly that is regulated by p125A and lipid signals.
J. Cell Sci. 127:1765-78. (Cover story)
27. Ernst W. Jr., Shome K., Wu C.C., Frizzell R.A. and **M. Aridor** (2016) Vap proteins as receptors that couple CFTR proteostasis with lipid homeostasis. *J Biol Chem.* 4;291(10):5206-20
28. K. R. Long and **M. Aridor** (2016) ER Exit Sites Organization Regulates Sec13/31 assembly. In preparation.

Reviews

1. **M. Aridor** and R. Sagi-Eisenberg (1991) The Role of GTP-Binding Proteins in the Control of Mast Cells Exocytosis. In Cellular and Cytokine Network, John Wiley and Sons, Inc., Vol. **11**, 169-175.
2. **M. Aridor** and W.E. Balch (1996) Principles in selective transport: Coat complexes hold the key.
Trends in Cell Biol. 6:315-320.
3. **Aridor, M.** and Balch, W.E. (1996) Membrane Fusion: Timing is everything.
Nature, **383**: 220-221.
4. W.E. Balch, Rowe T. , **Aridor M.** Bannykh, S. I. Plutner H. (1996) GTPases: Molecular sensors regulating bi-directional transport between the endoplasmic reticulum and the golgi
Biochem Soc. Trans. 24 585S

5. **M. Aridor** and W. E. Balch (1999) Integration of Endoplasmic Reticulum Signaling in Health and Disease.
Nature Medicine, **5**, 745-751
6. Allan BB, Weissman J, **Aridor M.** Moyer B, Chen CD, Yoo JS, Balch WE (2000) Stage specific assays to study biosynthetic cargo selection and role SNAREs in export from the endoplasmic reticulum and delivery to Golgi.
Methods; 20: 411
7. **M. Aridor** and W.E. Balch (2000) Drug Delivery: Regulating the export of ER cargo.
Science **287** 816- 817
8. **M. Aridor** and L. A. Hannan (2000) Traffic Jam: A compendium of Human Diseases that affect Intracellular Transport Processes.
Traffic, **1** 836-851
9. Weissman JT, **Aridor M.** and W.E. Balch (2001) Purification and Properties of rat liver Sec23-Sec24 complex. *Method in Enzymol.* **329** 431-438
10. **Aridor M.** Traub LM. (2002) Cargo selection in vesicular transport: the making and breaking of a coat.
Traffic 3(8): **537-46**
11. **Aridor M.** Hannan LA. (2002) Traffic Jams II: An Update of Diseases of Intracellular Transport.
Traffic 3 (11): 781-90
12. **Aridor M** Shome K. and Romero G. (2005) Assay and measurement of PLD activation by Sar1.
Methods in Enzymology 404, 108-114.
13. **Aridor M.** (2007) Visiting the ER: The Endoplasmic Reticulum as a target for therapeutics in traffic related diseases.
Advanced Drug Delivery Reviews 10; 59(8):759-81.

PROFESSIONAL ACTIVITIES

TEACHING:

Graduate Courses:

1. Regulation of Membrane Traffic 2001-Present
2. Cell Biology of Normal and Disease State 2001- Present
3. Foundations of Biomedical Science 2001- Present
4. Membrane Traffic (CBMP graduate program-journal club) 2001- Present (course co-director).
5. Imaging of living systems, 2011-present

University Service:

1. University of Pittsburgh, Department of Cell Biology
Recruitment committee, 2004-2006, 2010-current
2. University of Pittsburgh School of Medicine Interdisciplinary Biomedical Graduate Program:
Admissions committee: Committee member for the Cell Biology and Molecular Physiology program (2005-2008)
3. *Local traffic* symposium; organizing committee member (2001-current); Chair, 2006-7 meetings.
4. University of Pittsburgh School of Medicine, Department chair search committee (2008-2009)
5. University of Pittsburgh Department of Cell Biology
Graduate program steering committee 2010-current
6. University of Pittsburgh, School of Medicine,
Integrated Systems Biology (ISB)
Admission committee, PhD program.2014-current

Postdoctoral Fellows:

Anna Blumental-Perry, (Ph.D., 2001 The Hebrew University in Jerusalem Israel)
December 2001-June 2007. The role of phosphoinositides in ER export. *Department of Cell Biology and Physiology, University of Pittsburgh, Pittsburgh, PA.*

Current position: Assistant Professor, Department of Biomedical Sciences, Mercer University School of Medicine, Savannah, GA.

Anna Bielli, (deceased, Nov. 2006). Ph.D., 2001 Cork University Ireland.
January 2002-March 2005. The role of Sar1 in regulating membrane fission. *Department of Cell Biology and Physiology, University of Pittsburgh, Pittsburgh, PA.*

Yasunori Yamamoto, (Ph.D., 2004, Osaka University Japan)
August 2006-September 2007. Mechanisms and Regulation of COPII Vesicle Fission. *Department of Cell Biology and Physiology, University of Pittsburgh, Pittsburgh, PA.*

Current position: Assistant Professor, Division of Membrane Dynamics, Department of Physiology and Cell Biology, Kobe University Graduate School of Medicine, Japan.

Wayne Ernst Jr. (Ph.D. 2008, Baylor School of Medicine, Texas USA).
August 2008 –March 2013 Biogenesis of CFTR
Current: UPMC

Kimberly R. Long, (Ph.D., 2007, University of Massachusetts USA)
October 2007-September 2015, Mechanisms and Regulation of COPII Vesicle Fission. *Department of Cell Biology and Physiology, University of Pittsburgh, Pittsburgh, PA.*
Current: Staff Scientist University of Pittsburgh

PhD Students:

David Klinkenberg, PhD

Thesis title: Accessory Proteins at ERES-

“Assembly of ER exit site is regulated by interactions with p125A and lipid signals”

(Thesis work under my guidance at the University of Pittsburgh School of Medicine)

PhD awarded by the University of Copenhagen

Denmark, June, 2013

Ph.D. Committees:

Mark A. Ellis

Raul Rojas

Peter Keyel (Chair)

Asli Oztan

Matthew Hawryluk

Christopher J. Guerriero

James (Jake) Thieman (chair)

Karen Hecht

Anupma Jha

Xinxian(Joe) Qiao

Kaitlyn Dykstra (CMU)

Jeanne Morin-Leisk (CMU)

Comprehensive Exam Committees:

Mark Meidel

Dan Constantinescu

Hewa Achebe

Mark Ellis

Ed Wang

Steve Truschel

Romesh Dravian

Peter Keyel (chair)

Anna Zemke

Raul Rojas

Etan Block

James (Jake) Thieman (chair)

Christina Szalinski (chair)

Xinxian(Joe) Qiao

MEMBERSHIPS IN PROFESSIONAL AND SCIENTIFIC SOCIETIES

Organization

Year

RESEARCH**Pending Research Support:**

Grant #	Grant Title	Role in Project/ Percentage of Effort	Years Inclusive	Source/ total \$ Amount
1R01HL1 36735	The molecular basis for cellular dyslipidemia in cystic fibrosis	50	Pending review	NIH \$1,250,000
1R01GM-	Membrane contacts in ER to Golgi traffic	50	Prepared for submission	NIH \$1,250,000

Prior Grant Support:

TITLE	ROLE IN PROJECT	PROJECT PERIOD	TOTAL AWARD	AGENCY	Grant #
	% Effort				
Biogenesis of CFTR	Co-PI (10%)	08/01/01-09/01/03	\$100,000 TDC	NIH	DK56490-0
Regulation of cargo Degradation in the ER	PI	06/01/01-05/31/03	\$25,000 TDC	CMRF	
Mechanism of Cargo Selection in the Endoplasmic Reticulum Foundation	PI	10/01/01-09/30/04	\$195,000 TDC	Edward Mallincrodt Foundation	
Role of Presenilin complex Assembly and traffic in Alzheimer Disease (pilot)	PI	04/01/04-03/31/05	\$30,000 TDC	NIH	P50 AG05133
Phosphoinositides as Regulators of COPII Mediated ER export	PI	07/01/02-06/30/04	\$100,000 TDC	OIF	
Phosphoinositides as Regulators of COPII Mediated Export from the ER	PI	7/01/03-6/30/05	\$76000 TDC	AHA	
Presenilin complex assembly and intracellular	PI	04/01/05-03/31/07	\$100,000 TDC	American Health	

traffic				Assistance foundation	
Co-Chaperon Actions in CFTR Biogenesis	Co-PI (10%)	07/01/04-05/31/08	\$41,230	NIH	
Biogenesis of CFTR	PI	08/01/05-07/31/11	\$390000	CF foundation	
The Regulation of COPII coat Mediated ER export	PI (50%)	03/01/2004- 02/28/2009	\$1,455,630	NIH/NIDDK	1R01- DK062318
The Regulation of COPII coat Mediated ER export	PI (40%)	09/01/2009- 08/30/2010	\$188,750	NIH/NIDDK	2R56- DK062318- 06
Lipid environments In the ER and CFTR sorting	PI (0%)	05/01/2010- 30/04/2013	\$131,900	CFF	ERNST10F0
COPII assembly and vesicle formation at ER exit sites	PI (40%)	05/01/2012- 04/30/2014	\$440,546	NIH/NIDDK	5R01DK092 807

***TDC= Total Direct Cost**

Seminars and Invited Lectureships:

"Mechanisms of Cargo selection in the ER,"
Department of Cell Biology, School of Medicine
Duke University,
Durham, NC,
January 1999

"Mechanisms of Cargo selection in the ER"
Department of Cell and Structure Biology, University of Illinois,
Urbana Champaign, IL,
January 1999

"Mechanisms of Cargo selection in the ER"
Department of Biochemistry
University of Massachusetts School of Medicine
Worcester, MA
March 1999

"Mechanisms of Cargo selection in the ER"
Department of Pharmaceutical Sciences,
School of Pharmacy,
University of Southern California
Los Angeles, CA
April 2000

"Mechanisms of Cargo selection in the ER"

Senior Vice Chancellor Seminars,
University of Pittsburgh, School of Medicine,
January 2002

"Mechanisms of Cargo selection and export from the ER"

Case Western Reserve University
School of Medicine
Cleveland, OH
September 2002

"Mechanisms of Cargo selection and export from the ER"

University of Pittsburgh
School of Public Health
Pittsburgh PA
January 2003

"Mechanisms of Cargo selection and export from the ER"

University of Pittsburgh
Cell Biology and Physiology
Pittsburgh PA
December 2003

"Mechanisms of Cargo selection and export from the ER"

North Ohio Universities
College of Medicine
Rootstown OH
October 2004

"Mechanisms of Cargo selection and export from the ER"

Yale University
School of Medicine
New Haven Connecticut
October 2004

"COPII vesicle formation and fission"

Gordon Research Conference
Andover, NH
July 2005

"COPII vesicle formation and fission"

Renal Division
University of Pittsburgh
School of Medicine
October 2005

"COPII vesicle formation and fission"

University of Arkansas for Medical Sciences

Little Rock, AR
December 2005

“Exit from the ER, interplay between Proteins and Lipids”
Cambridge, MA
June 2008

“Exit from the ER, interplay between Proteins and Lipids”
Science 2008
Pittsburgh, PA
September. 2008

“ Visiting the ER, vesicle biogenesis and ER export’
Children Hospital
Pittsburgh, PA
March 2009

“ Visiting the ER, vesicle biogenesis and ER export’
Local Traffic meeting
Pittsburgh, PA
May 2009

“Membrane Shaping in Vesicular Traffic: Exit from the Endoplasmic Reticulum”
Physics Department
Carnegie Mellon University
Pittsburgh, PA
October 2009

“ CFTR biogenesis and lipid homeostasis”
CF center
University of Pittsburgh
School of Medicine
April 2010

"Cell Biology of CFTR Folding"
CF center
University of Pittsburgh
School of Medicine
May 2012

“VapB Regulation of CFTR biogenesis:
CF center
University of Pittsburgh
School of Medicine
May 2013

“A molecular cascade for exiting the ER”
Department of Cell Biology
University of Pittsburgh

School of Medicine
September 2013

“The Birth and Death of a Vesicle: A Nobel Idea”
University of Pittsburgh
School of Medicine
November, 2013

"A molecular cascade for exit from the ER"
Molecular Medicine seminar
Children's Hospital of Pittsburgh
November, 2014

"Super-Resolution Microscopy is Dynamite:
Its Beginning, Present, and Future"
School of Medicine
University of Pittsburgh
November, 2014

"Regulation of COPII at the ER-Golgi Interface"
Department of Cell Biology
University of Pittsburgh
School of Medicine
September 2015

“The roads travelled, protein traffic in cells,
traffic jams, and disease”.
Science on Tap
American Committee for the Weizmann Institute of Science
Pittsburgh
June 2016

Other Research Related Activities.

Ad Hoc Referee and Grant reviewer:

Nature Cell Biology

Developmental Cell

J. Cell Biol.

Mol. Biol. Cell

Traffic

J. Cell Science

J. Biol. Chem

Plos Biology

Molecular Neurodegeneration

Exp. Cell Res.

Mol. Pharmacol.

AJP

NSF

ISF

CURRENT RESEARCH INTERESTS:

The endoplasmic reticulum (ER) is the first compartment of the secretor pathway. Plasma membrane receptors, ion channels, hormones and secreted enzymes are few examples of proteins that are being processed and sorted for vesicular transport in the ER. The development of a variety of human diseases, ranging from hemochromatosis, cystic fibrosis or hereditary emphysema to Pelizaeus-Merzbacher or ALS and Alzheimer's neurodegeneration can be derived from mistakes in ER sorting. Viruses such as coxsackie, polio, cytomegalovirus, HIV-1 Epstein-Barr and others manipulate sorting to self propagate and/or to evade immune surveillance.

We take a multi disciplinary approach using a wide range of molecular, biochemical, biophysical and cellular techniques to unravel the molecular basis for protein and lipid sorting in the ER. Specifically, we use these approaches to address several related questions including the following: 1. What is the physical basis for membrane shaping and fission during ER exit? 2. What is the molecular basis for the assembly and organization of ER exit sites (ERES)? 3. How is the molecular machinery that organizes ERES regulated to couple ER sorting activities with physiological demands? 4. How are quality control activities in the ER coupled with cellular lipid homeostasis in normal and disease states?