

## Final Program

### 2004 FASEB Summer Research Conferences Biology of Calpains in Health and Disease June 12-17, 2004 Omni Tucson National Golf Resort and Spa Tucson, Arizona

#### Co-Organizers:

Dr. Neil E. Forsberg  
Oregon State University  
Corvallis, OR

Dr. Thomas Shearer  
Oregon Health Sciences University  
Portland, OR

#### Saturday, June 12, 2004

4:00p.m. – 9:00p.m.	Conference Registration
6:00p.m. – 7:00 p.m.	FASEB Opening Reception
7:00p.m. – 8:30 p.m.	Dinner
8:30p.m. – 9:00p.m.	Conference Logistics/Announcements: Neil Forsberg

#### Sunday, June 13, 2004

7:30a.m. – 9:00a.m.	Breakfast
	Morning Free

12:00p.m. – 1:00p.m.	Lunch
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<b>Session 1: 1:00p.m. – 4:45p.m</b>	<b>The calpain gene family: examples of isozyme function</b> Session Chair: Dr. Ron Mellgren, Medical College of Ohio and Dr. Tom Shearer, Oregon Health Sciences University
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1:00p.m. - 1:45p.m.	<b>Dr. Alan Barrett, Sanger Institute: <u>Keynote Speaker</u></b> <i>The world of cysteine peptidases, and the place of calpains in it.</i>
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1:45p.m. – 2:30p.m.	Dr. Darrel Goll, University of Arizona <i>The calpain system: remaining questions</i>
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2:30p.m. – 3:00p.m.	Group photo and FASEB Sponsored Coffee Break
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3:00p.m. – 3:30p.m.	Dr. Neil Forsberg. Oregon State University. <i>Calpain isozymes in skeletal muscle.</i>
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- 3:30p.m. – 4:15p.m. Dr. Shirley Gil-Parado, LMU University, Germany  
*Unexpectedly different invasive phenotypes of calpain1- and 2-antisense cell lines: non-overlapping roles of ubiquitous calpains in vivo?*
- 4:15p.m. – 4:45p.m. **Discussion Session I.** (Chairs- Dr. Darrel Goll and Dr. Shirley Gil-Parado). What are the functions of the different calpain isoforms: How is their expression regulated to specific tissues and times of development?
- 6:00p.m. – 7:00p.m. Dinner
- Session 2: activation** 7:00p.m. – 10:00p.m. **Calpain structure: Biophysical aspects of calpain**  
Session Chairs: Dr. D. Goll (U. Arizona) and Dr. P. Davies (Queen's University)
- 7:00p.m. - 7:40p.m. Dr. Tudor Moldoveanu, McGill University  
*Calpain activation and inhibition*
- 7:40p.m. – 8:20p.m. Dr. Zongchao Jia, Queen's University  
*Structure of mu-like calpain*
- 8:20p.m. – 8:40p.m. Break
- 8:40p.m. – 9:20p.m. Dr. Peter Davies, Queen's University  
*The protease core of muscle-specific calpain, p94.*
- 9:20p.m. – 10:00p.m. Special Presentation: Dr. Narin Banik, South Carolina.  
*Axonal Damage and Neuron Death in MS and EAE: A Pivotal Role for Calpain in Demyelination*

### **Monday, June 14, 2004**

- 7:30a.m. – 9:00a.m. Breakfast
- 10:00a.m. – 12:00p.m. Poster Session 1 (Presenters at even-numbered posters: Coffee provided by organizers). Student poster evaluation.
- 12:00p.m. – 1:00p.m. Lunch
- Session 3:** 1:00p.m. – 5:00p.m. **Physiological roles of calpains**  
Session Chairs: Dr. Hiroyuki Sorimachi (Tokyo Met. Inst. Med. Sci., Japan) and Dr. Koichi Suzuki (Toray, Japan)
- 1:00p.m. - 1:30p.m. Dr. Shoji Hata, Tokyo Met. Inst. for Med. Sci., Japan  
*Physiological functions of stomach-specific calpain, nCL-2/calpain-8, revealed by genetically-modified mice*

- 1:30p.m. – 2:10p.m. Dr. Athar Chishti, University of Illinois  
*Physiological function of mu-calpain in platelet signalling*
- 2:10p.m. – 2:30p.m. FASEB Sponsored Coffee Break
- 2:30p.m. – 3:10p.m. Dr. Hiroyuki Sorimachi, Tokyo Met. Inst. for Med. Sci., Japan  
*Novel functions of skeletal muscle-specific calpain, p94/calpain 3, shown by p94:C129S knock-in mice.*
- 3:10p.m. – 3:50p.m. Dr. Alan Wells, University of Pittsburgh  
*Regulation of ubiquitous calpains by growth factors and chemokines during cell motility*
- 3:50p.m. – 4:30p.m. Dr. Yashomati Patel, University of North Carolina  
*Calpain facilitates GLUT-4 vesicle translocation during insulin-stimulated glucose uptake in adipocytes*
- 4:30p.m. – 5:00p.m. **Discussion Session II.** (Drs. Moldoveanu and Jia) How are calpains activated *in vivo*?
- 6:00p.m. – 7:00p.m. Dinner
- Session 4: 7:00p.m. – 10:00p.m. Calpains and striated muscle disease**  
Session Chairs: Dr. Melissa Spencer (UCLA) and Dr. Isabelle Richard
- 7:00p.m. - 7:30p.m. Dr. Yasuko Ono, Tokyo Met. Inst. for Med. Sci., Japan  
*Development of an assay system for p94/calpain-3 toward diagnosis of muscular dystrophy*
- 7:30p.m. – 8:10p.m. Dr. Melissa Spencer, UCLA  
*Linking calpain-3 to the sarcomere*
- 8:10p.m. - 8:40p.m. Break
- 8:40p.m. – 9:20p.m. Dr. Gregory Cox, Jackson Laboratory  
*Testing the role of calpain-3 in mdm Mouse Muscular Dystrophy*
- 9:20p.m. – 10:00p.m. Dr. Isabelle Richard, Généthon, France  
*Calpain-3 and Limb Girdle Muscular Dystrophy 2A*

## Tuesday, June 15, 2004

- 7:30a.m. – 9:00a.m. Breakfast
- 10:00a.m. – 12:00p.m. Poster Session 2 (Presenters at odd-numbered posters).  
Student poster evaluation.

12:00p.m. – 1:00p.m. Lunch

**Session 5: 1:00p.m. – 4:30p.m**

**The calpains in pathology- I**

Session Chairs: Dr. P. Tompa (Hungarian Academy of Science) and Dr. Yashomati Patel (UNC)

1:00p.m. - 1:40p.m.

Dr. Mayana Zatz, University of Sao Paulo, Brazil  
*How broad is clinical variability in calpainopathy?*

1:40p.m. – 2:20p.m.

Dr. Thomas Shearer, Oregon Health Sciences University  
*Calpains and cataract*

2:30p.m. – 2:40p.m.

FASEB Sponsored Coffee Break

2:40p.m. – 3:20p.m.

Dr. Jeff Widrick, Oregon State University  
Calpains in muscle damage in exercise

3:20p.m. – 4:00p.m.

Dr. Mary Lokuta, University of Wisconsin  
Calpain mechanisms in motility and chemotaxis

4:00p.m. – 4:30p.m.

**Discussion Session III.** (Drs. Mellgren, Spencer and Patel).  
Do the calpains have roles other than as proteases?

6:00p.m. – 7:00p.m.

Dinner

**Session 6: 7:00p.m. – 10:00p.m**

**The calpains in pathology II**

Session Chairs: Dr. S. Gil-Parado (LMU, Germany) and Dr. N. Tavernarakis (Greece)

7:00p.m. - 7:40p.m.

Dr. Roberta Gottlieb, Scripps Institute  
*Role of calpain in myocardial ischemia/reperfusion injury*

7:40p.m. – 8:20p.m.

Dr. Nektarios Tavernarakis, IMBB, Greece  
*Calcium and protease cascades in neurodegeneration*

8:20p.m. – 8:40p.m.

Break

8:40p.m. – 9:20p.m.

Dr. Mitsuyoshi Azuma, Senju Pharmaceuticals, Japan  
*Involvement of calpain in retinopathy*

9:20p.m. – 10:00p.m.

Dr. Kevin Wang, University of Florida  
*The calpain “degradome”*

**Wednesday, June 16, 2004**

7:30a.m. – 9:00a.m.

Breakfast

Free Morning/Organized Activities  
Times and Activities: To Be Announced

	12:00p.m. – 1:00p.m.	Lunch
<b>Session 7:</b>	<b>1:00p.m. – 4:40p.m</b>	<b>Calpain inhibitors in the treatment of disease</b> Session Chairs: Dr. K. Wang (U. Florida) and Dr. P. Friedrich (Hungarian Academy of Science)
	1:00p.m. - 1:45p.m.	Dr. Peter Friedrich, Hungarian Academy of Science <i>A novel small subunit for mammalian calpains</i>
	1:45p.m. – 2:30p.m.	Dr. Ottavio Arancio, NYU School of Medicine <i>Calpain inhibitors: a treatment of Alzheimer's disease</i>
	2:30p.m. – 2:50p.m.	FASEB Sponsored Coffee Break
	2:50p.m. – 3:30p.m.	Dr. Peter Tompa, Hungarian Academy of Sciences <i>Activation of calpains by fragments of its unstructured inhibitor, calpastatin</i>
	3:30p.m. – 4:10p.m.	Dr. Alfred Stracher, (New York). Calpain inhibitors as therapeutic agents in neuromuscular and neurodegenerative diseases.
	4:10p.m. – 4:40p.m.	<b>Discussion Session IV.</b> (Drs. Stracher, Friedrich and Wang). Problems and potentials in developing specific calpain inhibitors.
	6:00p.m. – 7:00p.m.	Dinner
<b>Session 8:</b>	<b>7:00p.m. – 10:00 p.m</b>	<b>Agricultural applications of calpains</b> Session Chairs: Dr. Ron Bardsley and Dr. M. Koohmaraie (USDA-MARC).
	7:00p.m. – 7:40p.m.	Dr. Roy Bickerstaffe, Lincoln University, NZ <i>The role of calpain-3 and calpain-10 in meat tenderization</i>
	7:40p.m. – 8:20p.m.	Dr. Mohammad Koohmaraie, USDA-MARC, Nebraska <i>The role of calpains in postmortem proteolysis and tenderness</i>
	8:20p.m. – 8:40p.m.	Break
	8:40p.m. – 9:20p.m.	Dr. Didier Attaix, INRA, France <i>Involvement of the proteasome and lysosome in calpain-3-deficient mice</i>
	9:20p.m. – 10:00p.m.	Dr. Steven Lonergan, Iowa State University Influence of nutrition on calpastatin in skeletal muscle

## Thursday, June 17, 2004

7:30a.m. – 9:00a.m.

Breakfast

### **Session 9: 9:00a.m. – 10:30a.m**

#### **Calpains: Student Perspectives**

Session Chairs: Dr. R. Bickerstaffe (Lincoln U, NZ) and Dr. Y. Ono (Tokyo Met. Inst. Med. Sci., Japan). Twelve minute talks followed by 3 minutes for questions.

9:00a.m. – 9:15a.m.

David Arrington. Medical University of South Carolina. Ca<sup>2+</sup>-induced mitochondrial dysfunction is mediated by a calpain-like activity in renal cortical mitochondria

9:15a.m. – 9:30a.m.

Dominic Currier. Queen's University. A peptide library-based approach to studying substrate specificity in calpains.

9:30a.m. – 9:45a.m.

Eric Czerwinski. Medical College of Ohio. Exploring the mechanism of CAPN10 involvement in Type II diabetes.

9:45a.m. – 10:00a.m.

Suguru Koyama. Tokyo Metropolitan Institute of Medical Science. Analysis of functions of muscle specific RING finger protein, MURFs, and its relationships with the calpain system.

10:00a.m. – 10:15a.m.

Oliver Popp. LMU Germany. Conventional calpains regulate matrigel-invasion: A potential role for protein kinase C isoforms.

10:15a.m. – 10:30a.m.

Barbara Tremper-Wells. SUNY Upstate Medical University. Calpain catalyzes the proteolysis of Ca<sup>2+</sup>/calmodulin-dependent protein kinase IV (CaMKIV) in neuronal nuclei.

10:30a.m. – 10:45a.m.

Break

**Late-breaking research presentations.** Session Chairs: Dr. Neil Forsberg (Oregon State U.) and Dr. Hiroyuki Sorimachi (Tokyo Met. Inst. Med. Sci., Japan).

10:45a.m. – 11:00a.m.

Dr. David Potter. Calpain Regulates Multiple Breast Cancer Cell Cycle Checkpoints

11:00a.m. – 11:15 a.m.

Dr. B. Rohrer. Medical University of South Carolina. Calcium-Induced Calpain Mediates Apoptosis In Photoreceptor Degeneration Via Caspase-3

11:15a.m. – 11:30a.m.

Dr. C. Neuhof. LMU, Germany. Effect of calpain inhibition in myocardial ischemia and inflammatory lung Injury

11:30a.m. – 12:00p.m.

**Discussion Session V.** (Drs. Goll, Tavernarakis, and Davies). Future directions for calpain research: possible collaborations.

12:00 Noon

Murachi Awards for Outstanding Student Research and Posters (Dr. Tom Shearer, Chair, and Drs. Koohmaraie, Croall and Kosower)

12:15p.m.

Session completion (Dr. Tom Shearer)

12:15p.m. – 1:30p.m.      Box Lunches Available

**END OF CONFERENCE**

For additional information contact:

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