THE PANCREAPEDIA Beta

Exocrine Pancreas Knowledge Base

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Expediting the understanding of pancreatic function and disease through information sharing and community building.

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About Pancreapedia BETA

Our goal for the site is to allow members of the pancreas research community to view content, provide new content, and comment on site development prior to its full release.

We want your help in completing this knowledgebase and welcome your contributions, suggestions for content, and feedback on the site.

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Featured Content NEW

Learn about a range of Exocrine Pancreas research methods in our Methods section

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Recent Publications

Title	Type	Post date	Author
Pathophysiological Pathways	Pathways	June 20, 2012	Pancreapedia Staff
Hormonal Control of Pancreatic Function	Pathways	June 19, 2012	John A. Williams
Pancreatic Pain	Pathways	June 19, 2012	John A. Williams
Transient Receptor Potential Vanilloid 1 (TRPV1)	Molecules	June 5, 2012	Rodger A. Liddle
Insulin Receptor	Molecules	May 16, 2012	Maria Dolors Sans Gili
CUX1	Molecules	April 10, 2012	Patrick Michl
The effects of bile acids on pancreatic ductal cells	Reviews	April 9, 2012	Viktoria Venglovecz
Regulation of NF-kappaB Activation	Pathways	April 9, 2012	John A. Williams

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Exocrine pancreas research community

Expedite research on the pancreas

Reference book, methods book, cellular atlas and directory

THE PANCREAPEDIA

Beta

Exocrine Pancreas Knowledge Base

Rab8

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by Michael Schrader

Entry Version: Version 1.0, January 4, 2011

Citation: Gomez-Lazaro, Maria, Aroso, Miguel, and Schrader, Michael. (2011). Rab8. The Pancreapedia: Exocrine Pancreas Knowledge Base, DOI: 10.3998/panc.2011.2

Gene symbols: RAB8A, RAB8B

1. General Function

Rab8 (Ras-related proteins in brain 8) is a 24 kDa protein that belongs to the Rab GTPase family (7). Rab proteins are known for their participation in and regulation of intracellular membrane trafficking pathways (17, 45, 47). In their active GTP-bound state different Rab proteins bind to different membrane compartments and recruit specific effector proteins, which are not only involved in docking and fusion with the target membrane but also in the formation of transport vesicles and in binding motor proteins for vesicle transport (17, 18, 27, 44, 47).

Rab8 displays high homology with the yeast *S. cerevesiae* protein SEC4 involved in post-Golgi traffic (16, 24) and with the *S. pombe* protein Ypt2p that acts as well in the last stage of the secretory pathway (4). In humans there are two isoforms with 80% homology, Rab8a and Rab8b, which have a differential expression pattern (Figure 1). Rab8b is expressed in spleen, testis and brain (2, 8) while Rab8a is more ubiquitous expressed but shows low expression levels in the three organs (8). Nevertheless, Rab8a and Rab8b have been shown to play a similar role in vesicular traffic from the Golgi complex to the plasma membrane in regulated secretion in ATt20 cells (8). The Rab8 lipid motif differs from other Rabs resulting in only one geranylgeranylation (3, 26). A preliminary X-ray crystallographic analysis of mammalian Rab8 in complex with the nucleotide exchange factor MSS4 has been published (25).

```
HUMAN RAB8A   MAKTYDYLFKLLLIGDSGVGKTCVLFRFSEDAFNSTFISTIGIDFKIRTIELDGKRIKLQ  60
HUMAN RAB8B   MAKTYDYLFKLLLIGDSGVGKTCLLFRFSEDAFNTTFISTIGIDFKIRTIELDGKKIKLQ  60
              ************************:*********:**********************:****

HUMAN RAB8A   IWDTAGQERFRTITTAYYRGAMGIMLVYDITNEKSFDNIRNWIRNIEEHASADVEKMILG  120
HUMAN RAB8B   IWDTAGQERFRTITTAYYRGAMGIMLVYDITNEKSFDNIKNWIFNIEEHASSDVERMILG  120
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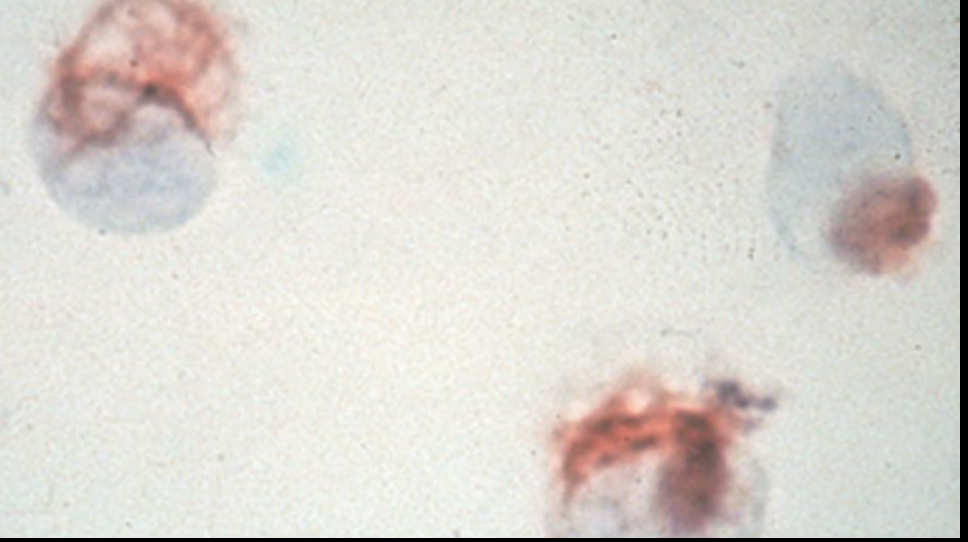
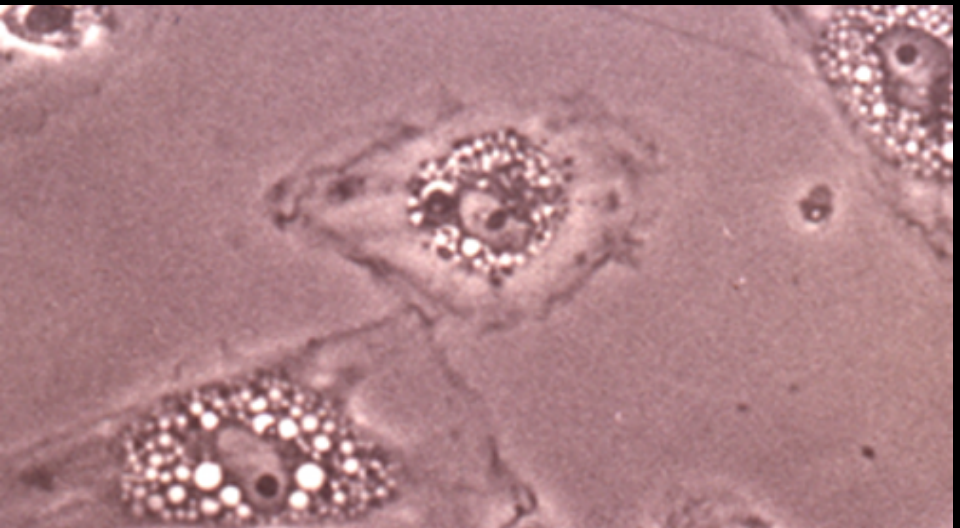
- Reviews
- Pathways, molecules & cell structures
- Research tools
- Communitty



Two distinct sets of functions

Distinct function from other organs

Unique diseases



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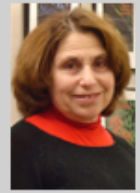
Primary Investigator

Merle Rosenzweig
Liaison Librarian, Health Sciences Libraries



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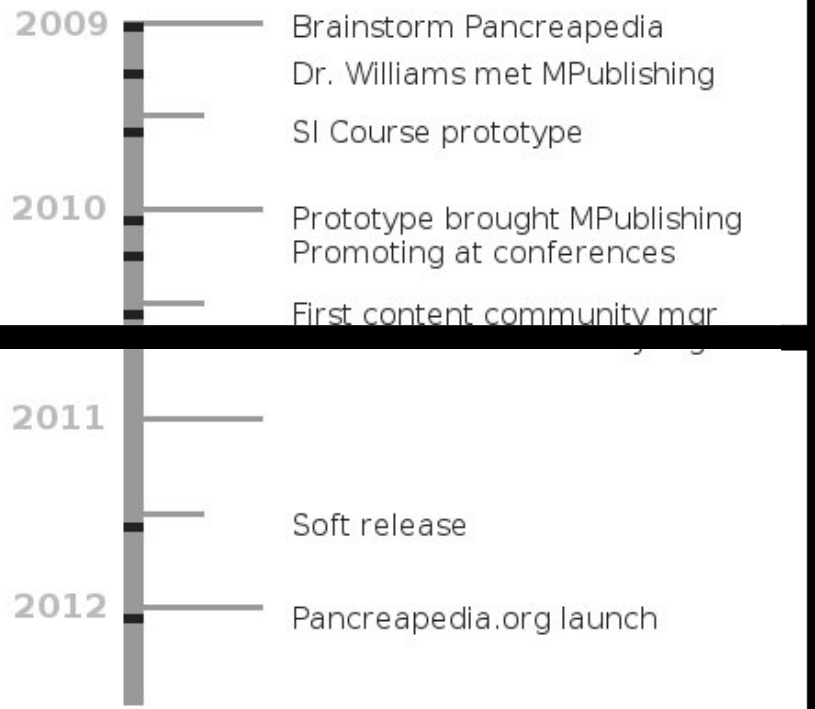

2009
Brainstorm Pancreapedia
Dr. Williams met MPublishing
SI Course prototype
2010
Prototype brought MPublishing
Promoting at conferences
First content community mgr
2011
Soft release
2012
Pancreapedia.org launch

Challenge:

Getting potential contributors to to view Pancreapedia as serious publishing.

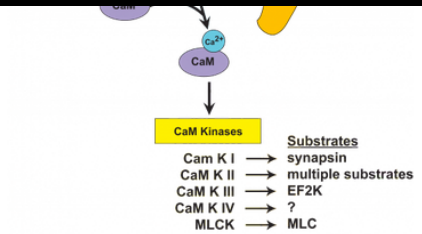
Community:
357 registered users

* As of July 24, 2012

80% curation,
20% social networking

Building participation is the single most critical issue.

Expecting a tipping point.



Reviews

- Ca^{2+} activated protein phosphorylation by CaM kinases and their role in secretion and other functions

Components

- Calmodulin
- CaM kinase I
- CaM kinase II
- CaM kinase III (EF2 kinase)
- CaM kinase IV
- Myosin light chain kinase

Methods

- Identification of calmodulin binding proteins
- Studies of protein phosphorylation in isolated acini

Community
- People
  - Browse
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- Events
- Jobs

Browse People

Browse the Pancreapedia member directory or search for people.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Name	Institution	Country	Memberships	
Adelson, Joel W.	UCSF	USA	None	
Aghdassi, Ali A.	University of Greifswald	Germany	EPC	
Ahmad, Mahwish	Yale University	USA	None	
Ahmad, Asim	Yale University	USA	None	
Albers, Kathyn	University of Pittsburgh	USA	None	
Alhosh, Rabea	University of Iowa	USA	None	
Alsfasser, Guido	Dept of General Surgery, University of Rostock	Germany	APA IAP	
Amin, Ruchi	University of Michigan	USA	None	

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Bottom-up approach:

- Registering users.
- Encouraging contributions.
- Lower energy barrier.

Building a community so researchers feel it's important to join.

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