

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.

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](#)

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 Dolores 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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Research Tools

Methods

Reagents

Antibodies

Mouse Models

Viral Vectors

Data Sets

Research Tools

This section presents information on [Methods](#), [Reagents](#), and [Data Sets](#). [Methods](#) are designed so that they can be followed by other researchers in a "cookbook" manner. [Reagents](#) includes sections on antibodies, plasmids, viral vectors, PCR primers and transgenic and knockout mouse lines. These entries will come both from material in the [Molecules](#) section and entries submitted directly by the community. The aim is to list reagents that have been tested on the pancreas and give the conditions for their use.

Entry of [Reagents](#) generated by members of the community implies a willingness to share with others.

Newest Research Tools

Title	Type	Post date	Author
L-arginine-induced experimental acute pancreatitis	Methods	March 8, 2012	Rajinder Dawra
Quantitation and visualization of protease activation in pancreatic acini	Methods	January 31, 2012	Markus M. Lerch
Quantitating inflammation in a mouse model of acute pancreatitis	Methods	January 19, 2012	Madhav Bhatia
Measurement of intracellular calcium concentration in pancreatic acini	Methods	December 2, 2011	David Yule
Expression and assay of pancreatic triglyceride lipases	Methods	November 22, 2011	Mark Lowe
Tumor-stromal interactions assessed by co-injection of pancreatic stellate and cancer cells	Methods	October 28, 2011	Rosa F. Hwang
Measuring Ca²⁺ dynamics in pancreatic acini using confocal microscopy	Methods	October 20, 2011	Sohail Husain
Isolation, purification and protein content of pancreatic endoplasmic reticulum	Methods	October 7, 2011	John A. Williams
Optical measurement of ductal fluid secretion	Methods	September 30, 2011	José Ignacio San Román

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Exocrine pancreas research community

Expedite research on the pancreas

Reference book, methods book, cellular atlas and directory

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[Molecules](#) / Rab8

Rab8

Maria Gomez-Lazaro, [Miguel Aroso](#), [Michael Schrader](#)

Centre for Cell Biology & Dept. of Biology, University of Aveiro, Campus Universitário de Santiago,
3810-193 Aveiro, Portugal

mschrader@ua.pt

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](#)




by [Michael Schrader](#)

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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. cerevisiae* 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 AT120 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).

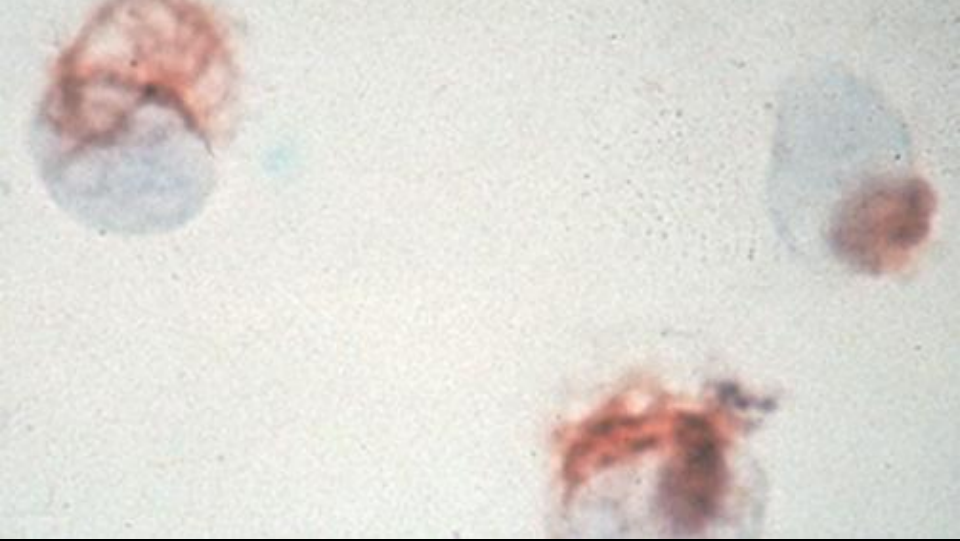
HUMAN RAB8A	MAKTYDYLFLKLLIDSGVKTCLVFRFSEDAFNITFISLIGIDFKIRTIELDGKRIKIQ	60
HUMAN RAB8B	MAKTYDYLFLKLLIDSGVKTCLVFRFSEDAFNITFISLIGIDFKIRTIELDGKRIKIQ	60
.....		
HUMAN RAB8A	INVDLGGPRTITITATYRSGDMLDYDITNEKSTNIRMERNIEEHAASDVEMHILG	120
HUMAN RAB8B	INVDLGGPRTITITATYRSGDMLDYDITNEKSTNIRKNIINIEEHAASDVEMHILG	120

Reviews

Pathways, molecules & cell structures

Research tools

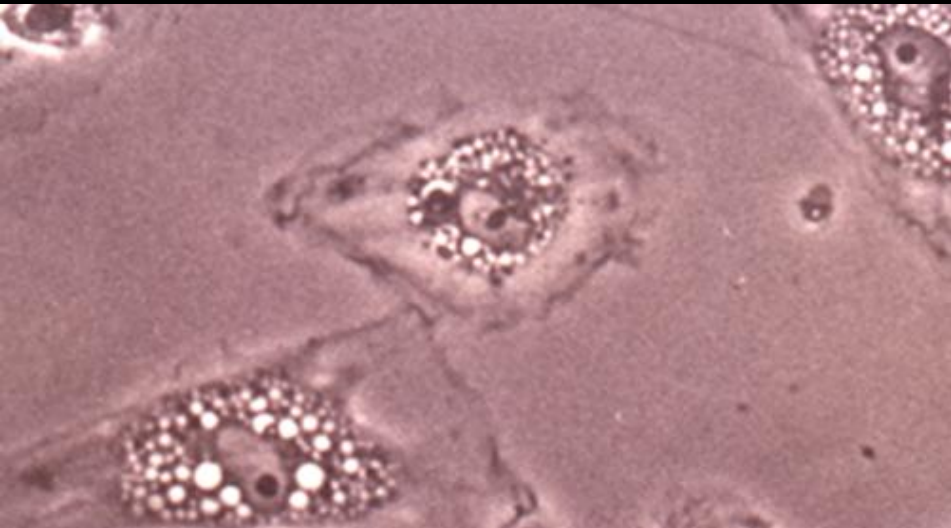
Community



Two distinct sets of functions

Distinct function from other organs

Unique diseases





John Williams

Primary Investigator



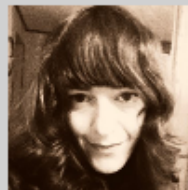
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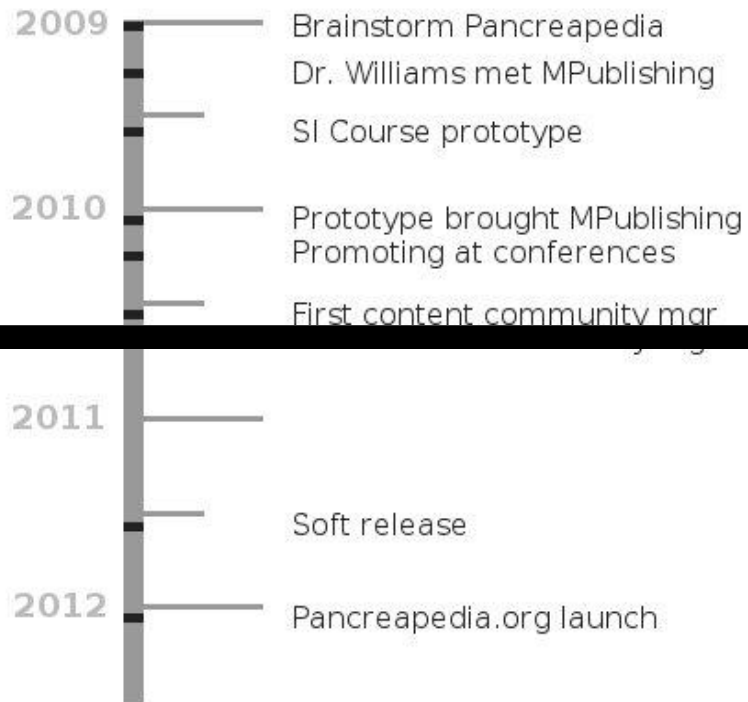
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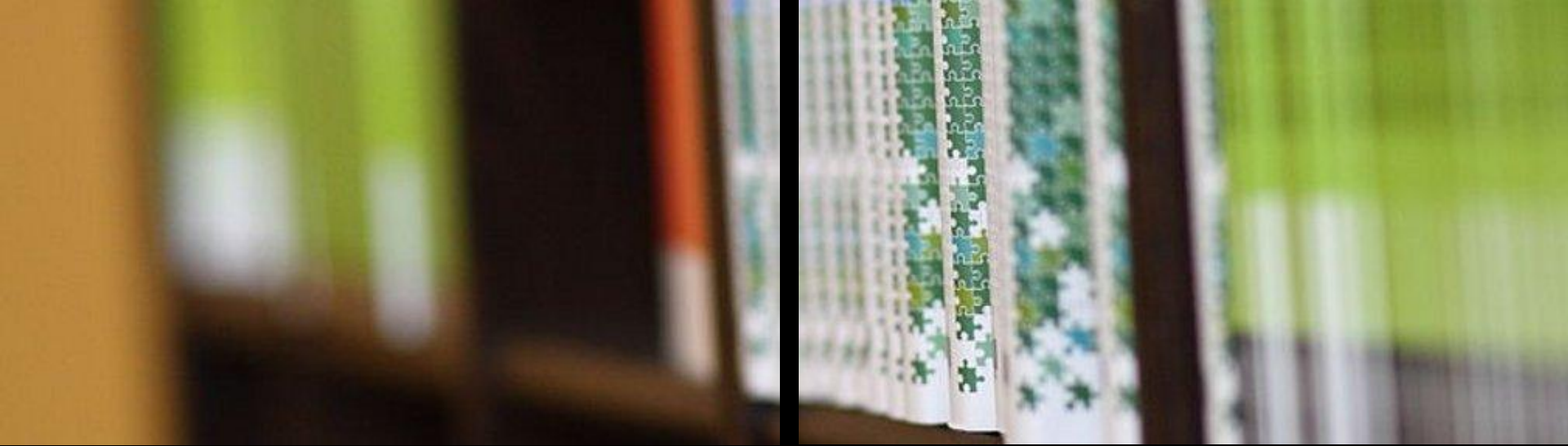
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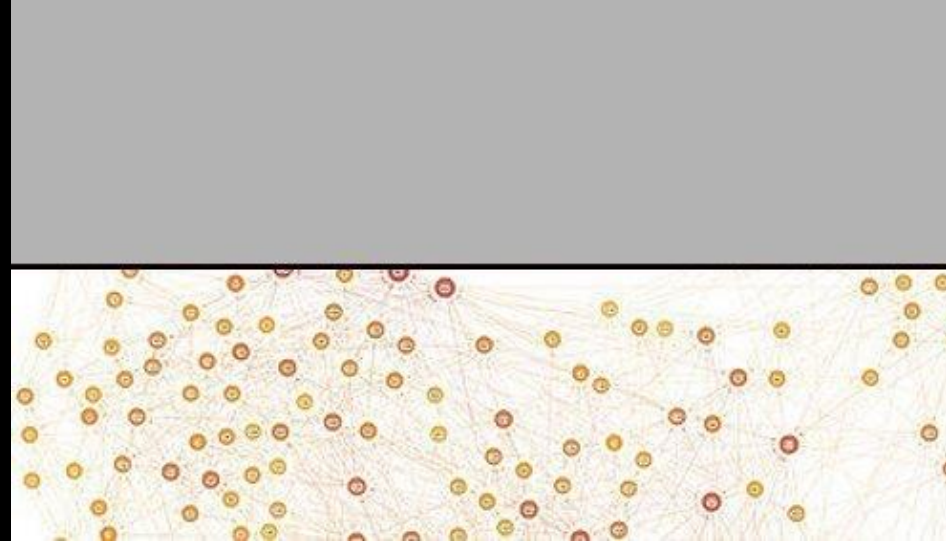
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Challenge:

Getting potential contributors to view Pancreapedia as serious publisher.



80% curation,
20% social networking

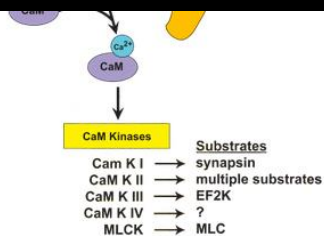


Community:
357 registered users

* As of July 24, 2012

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

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Aghdassi, Ali A.	University of Greifswald	Germany	EPC
Ahmad, Mahwish	Yale University	USA	None
Ahmad, Asim	Yale University	USA	None
Albers, Kathrin	University of Pittsburgh	USA	None
Alhosh, Rabee	University of Iowa	USA	None
Alfasser, 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 to building
community resource.

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