

# A sample research poster

Jean-luc Doumont

In these pages, you will find an example of what we at Principiæ consider an effective research poster. This poster was originally created by Karen Rosier, then revised/redrawn by myself, with Karen's help. It is designed as an A4 page, which can be scaled to the required printing dimensions (typically A0) but also printed as such on A4 paper as a handout. The back of the handout can provide extra content, such as contact details, methods, and references, as shown on page 3. A small flyer, shown on page 4, can help promote the poster during the conference.

For more on the design choices behind this poster, see our related booklet *Effective conference posters* and our flagship book *Trees, maps, and theorems*.



**Principiæ**  
Structuring thoughts

# Deficiency of the serine hydrolase PREPL results in impaired regulated secretion

Karen Rosier, Luc Régal, and John Creemers

KU LEUVEN

Congenital PREPL deficiency causes a rare metabolic disorder

PREPL is a homologue of propyl endopeptidase  
 a serine peptidase which cleaves small peptides (less than 3 kDa)  
 is a cytoplasmic enzyme highly expressed in brain less so in heart, kidney, skeletal muscle  
 has confirmed catalytic activity, but no identified substrate

growth-hormone deficiency  
 feeding problems  
 hypotonia



Patient at 6 months

Child patient

We investigated how PREPL deficiency impairs secretion

⇒

We hypothesize that PREPL has palmitoyl thioesterase activity, removing palmitate from cysteine in proteins involved in regulated secretion

Silencing of PREPL impairs secretion in  $\beta$ -TC3 cells

Stimulated secretion

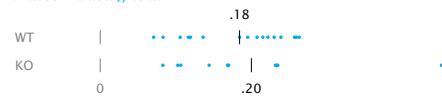


Basal secretion

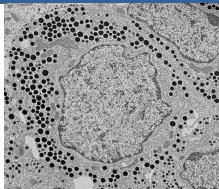
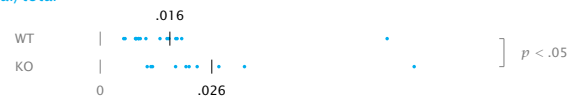


PREPL KO somatotrophs exhibit disturbed GH secretion

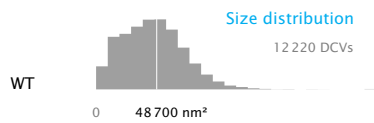
(stimulated - basal)/total



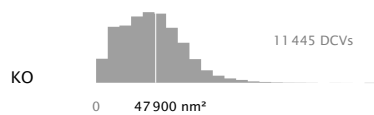
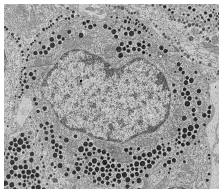
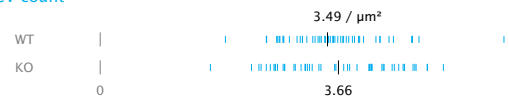
basal/total



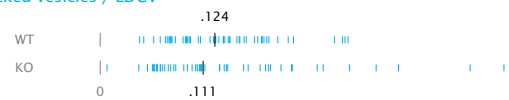
In contrast, PREPL KO somatotrophs do not differ in dense-core vesicles



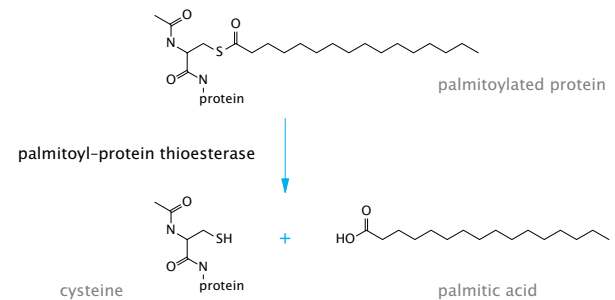
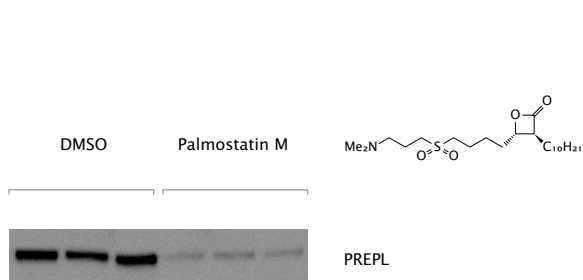
LDCV count



Docked vesicles / LDCV



PREPL is inhibited by an acyl-protein thioesterase inhibitor



Karen Rosier

karen.rosier@kuleuven.be

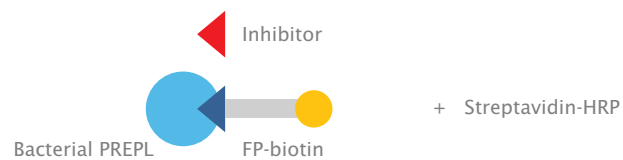
KU Leuven

Human Genetics

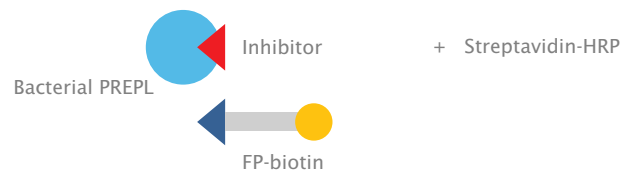
Leuven, Belgium

### Competition experiment with serine hydrolase inhibitor and FP-biotin

No inhibition



Inhibition



Child patient photo taken from

Jaak Jaeken *et al.*, John Creemers *et al.*

Deletion of PREPL, a gene encoding a putative serine oligo-peptidase, in patients with hypotonia-cystinuria syndrome

*The American Journal of Human Genetics* 78, 38-51 (1996)

Baby patient photo and  $\beta$ -TC3 cell data taken from

Luc Régal *et al.*, John Creemers *et al.*

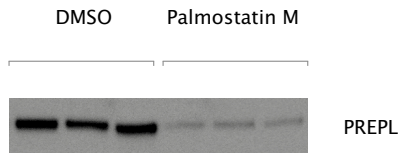
PREPL deficiency with or without cystinuria causes a novel myasthenic syndrome

*Neurology* 82, 1254-1260 (2014)

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## Poster 27

Thursday, 16:30–18:00  
in the Foyer (South side)



## Deficiency of the serine hydrolase PREPL results in impaired regulated secretion

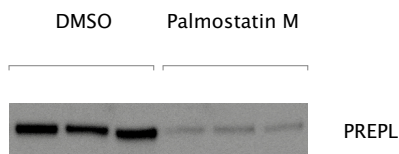
Karen Rosier, Luc Régal, and John Creemers  
Human Genetics, KU Leuven (Belgium)

Congenital PREPL deficiency causes a rare metabolic disorder (growth-hormone deficiency, feeding problems, hypotonia). We thus investigated how PREPL deficiency impairs secretion and hypothesize that PREPL has palmitoyl thioesterase activity.

Are you curious about what we found and how we designed our experiments? Come see our poster on Thursday at 16:30.

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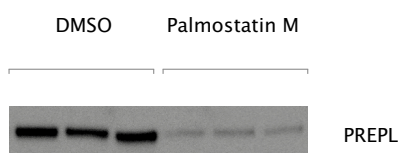
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