Cellular Physiology of Secretory Processes

UNIVERSITY OF COPENHAGEN

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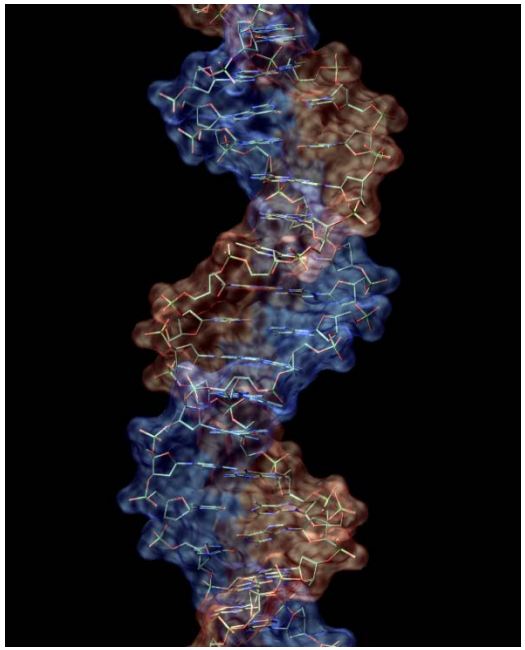
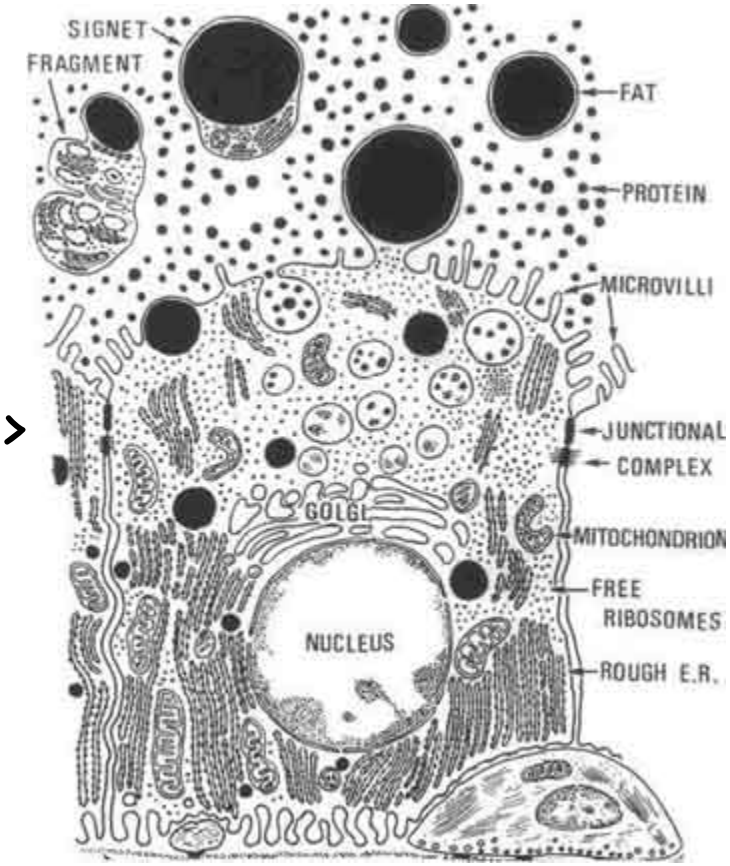
64th EAAP 2013

ANNUAL MEETING OF THE EUROPEAN FEDERATION OF ANIMAL SCIENCE

AUGUST 26TH - 30TH, 2013
NANTES, FRANCE

Overview:
Why a Session on Secretory Processes?





Do we have a knowledge gap?

- Review of the all the Session titles from the last 9 EAAP Meetings, 2004-2012:
  - 16 titles included the word "genomics"
  - 2 included "secretion"
  - "Cellular" did not appear once

Aspiration:
Bring back the cell!

- 2013, Nantes:

  Cellular Physiology of Secretory Processes ✓

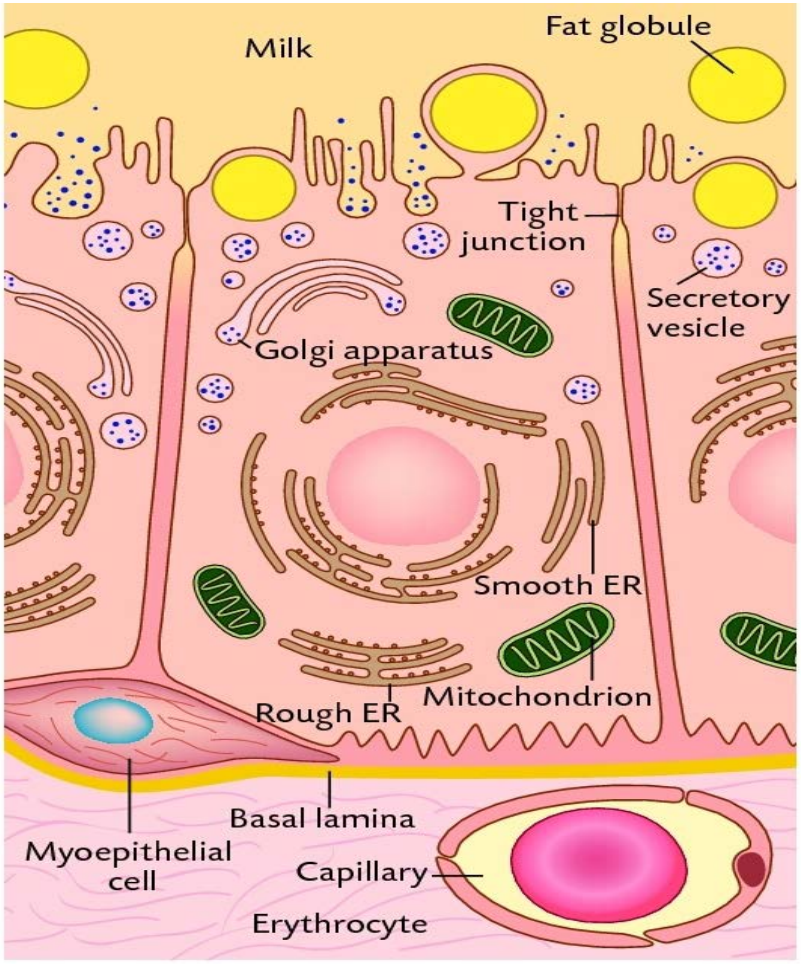
- 2014, Copenhagen:

  Cellular Physiology of Reproductive Processes

- 2015, Warsaw:

  Cellular Physiology of Growth Processes

Milk Synthesis and Secretion



Storage until milking/suckling

Secreted

Trafficked

Used for synthesis

Para-cellular flux through leaky TJ

Substrates taken up by secretory cell

Substrates diffuse out of capillary

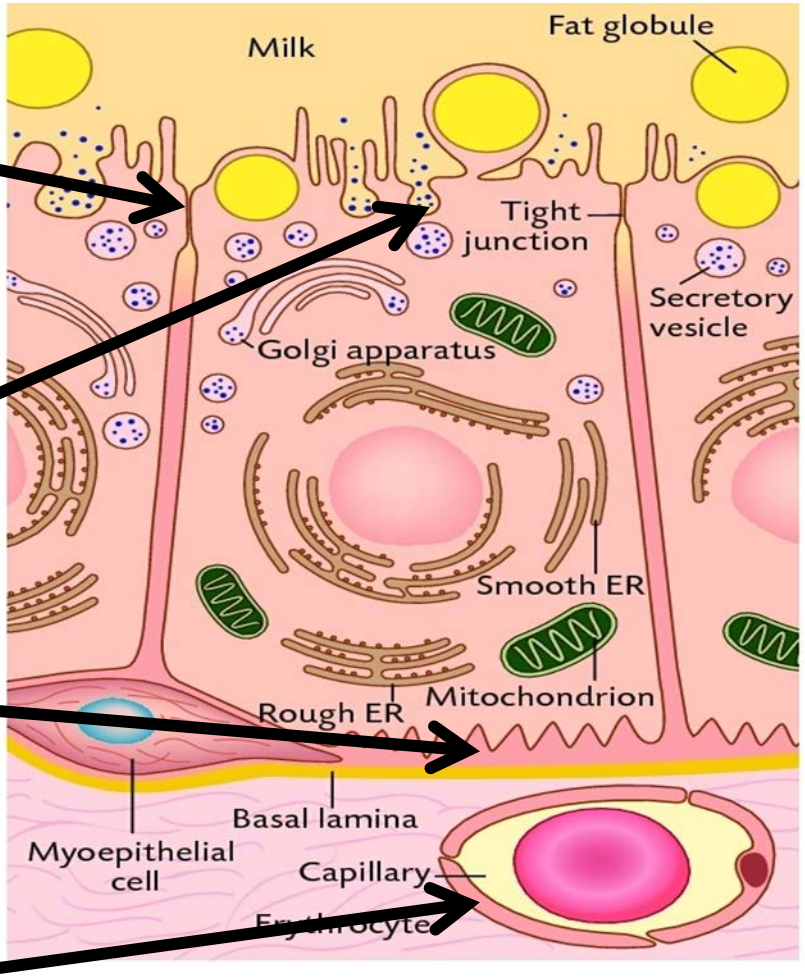
Speakers and Topics

Paul Whitley, tight junction

Sandrine Truchet, exocytosis

Feng-Qi Zhao, glucose uptake

Dan Klærke, membrane physiology



Questions?

- How does the membrane accommodate large changes in cell shape/size/stretch?
- How does the membrane regulate water flux?

- How is glucose uptake regulated?
- How is glucose trafficked to the Golgi?
- How does the secretory vesicle "find" the apical membrane?
- How is the balance between apocine secretion and exocytosis maintained?
- How can the cell function effectively with both "tight" TJ and "leaky" TJ?
- How selective/non-selective is paracellular flux?

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Answers?
New questions?