

Proteases to unleash indulgent pleasure from plant proteins

Egon Bech Hansen

Research Group for Gut, Microbes and Health

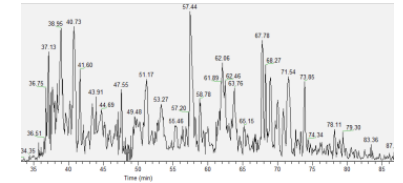
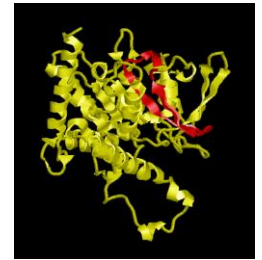
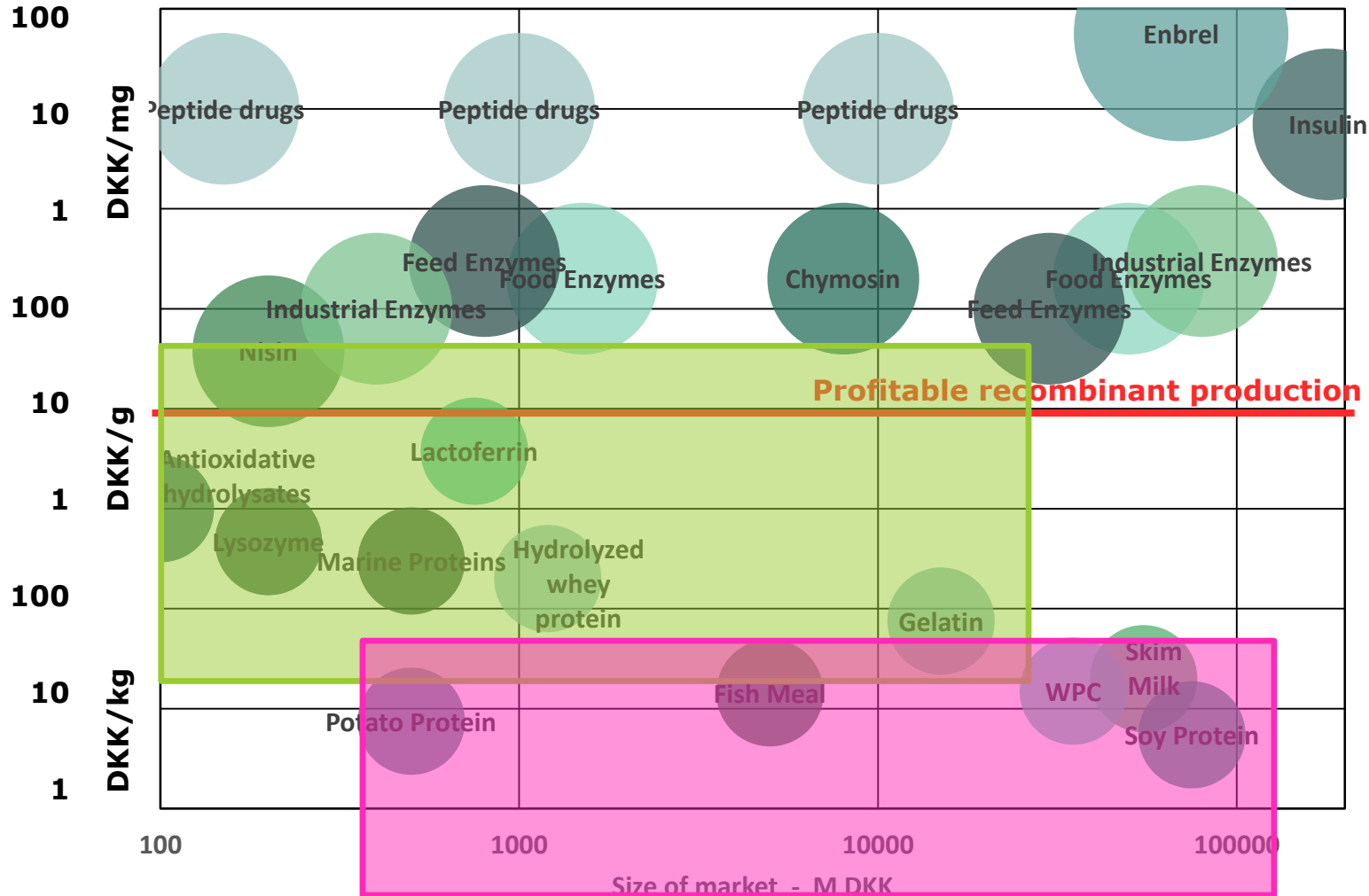
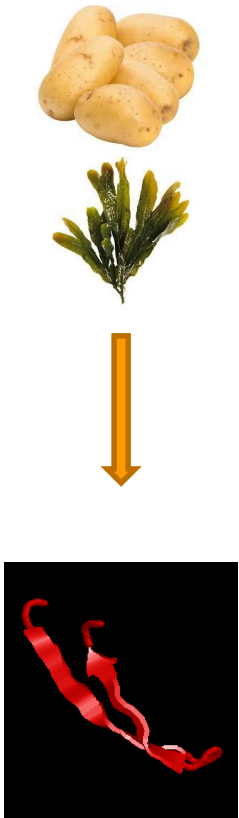
Sustainable food production

- Farewell to animals
- Farewell to meat, milk, and egg
- Farewell to animal fat
- Farewell to animal protein
 - We need to upgrade nutritional quality of plant proteins
 - We will lose centuries of gastronomy experience based on functionality of proteins from egg and dairy
 - We need to develop methods to obtain similar plant protein functionality



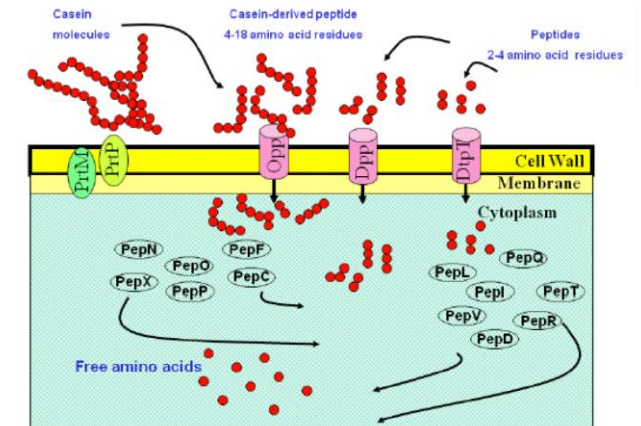
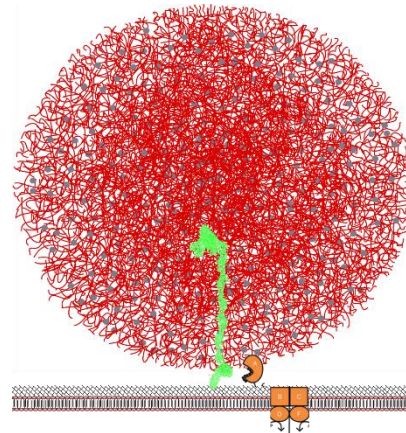
Protein Valorization

DTU, AAU, KNC, AKV, KMC, CpKelco, UniBio, LPC
Egon Bech Hansen, DTU Food



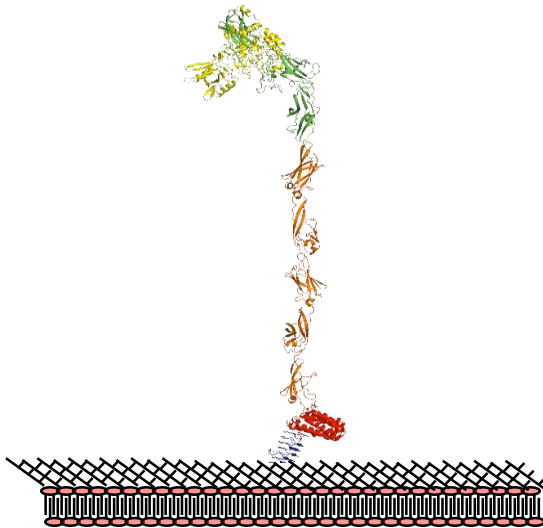
Proteinases are key to functional diversity of animal proteins

- Cheese require the use of coagulants
 - Coagulants are proteases cleaving kappa-casein
 - The most specific (the best) is chymosin a mamalian enzyme which can be produced by fermentation
- Starter cultures are also needed for cheese production
- Cheese ripening change texture and aroma involving cultures and enzymes
- All food fermentations depend on proteolytic processes by the cultures used and the native enzymes of the food matrix.



Proteinases specific for plant proteins will allow us to create indulgence similar to what we get from animal proteins

- Lactic acid bacteria harbor cell envelope proteinases with a multitude of specificities without causing spoilage due to overdigestion



Acknowledgements:

Lise Friis Christensen

Ivy Fugaban

Ida Laforce

Nina Corydon

Paolo Marcatili

Betül Yesiltas

Charlotte Jacobsen

Claus Heiner Bang-Berthelsen