

What is gluten and what is it's function in bread?



Michael Gänzle

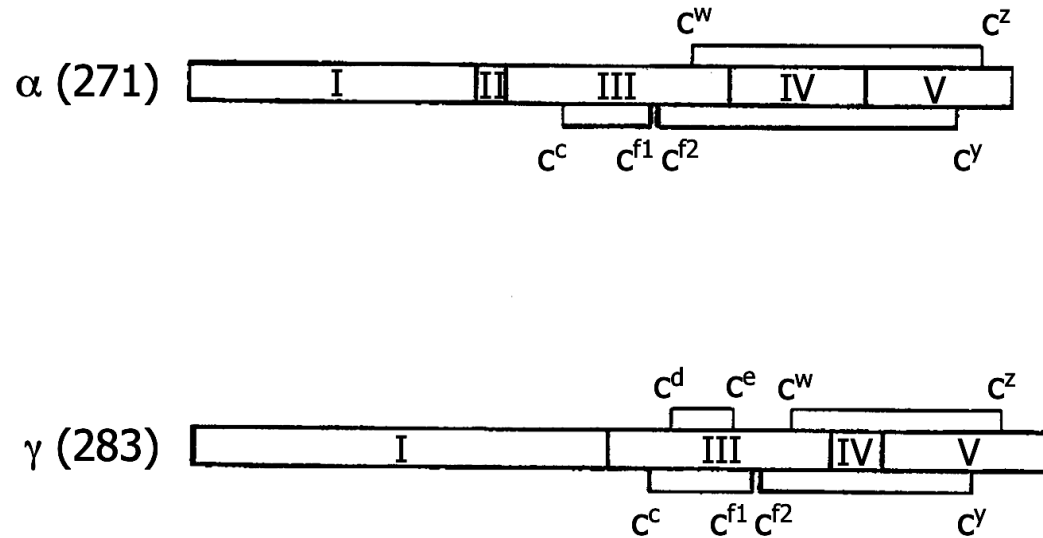
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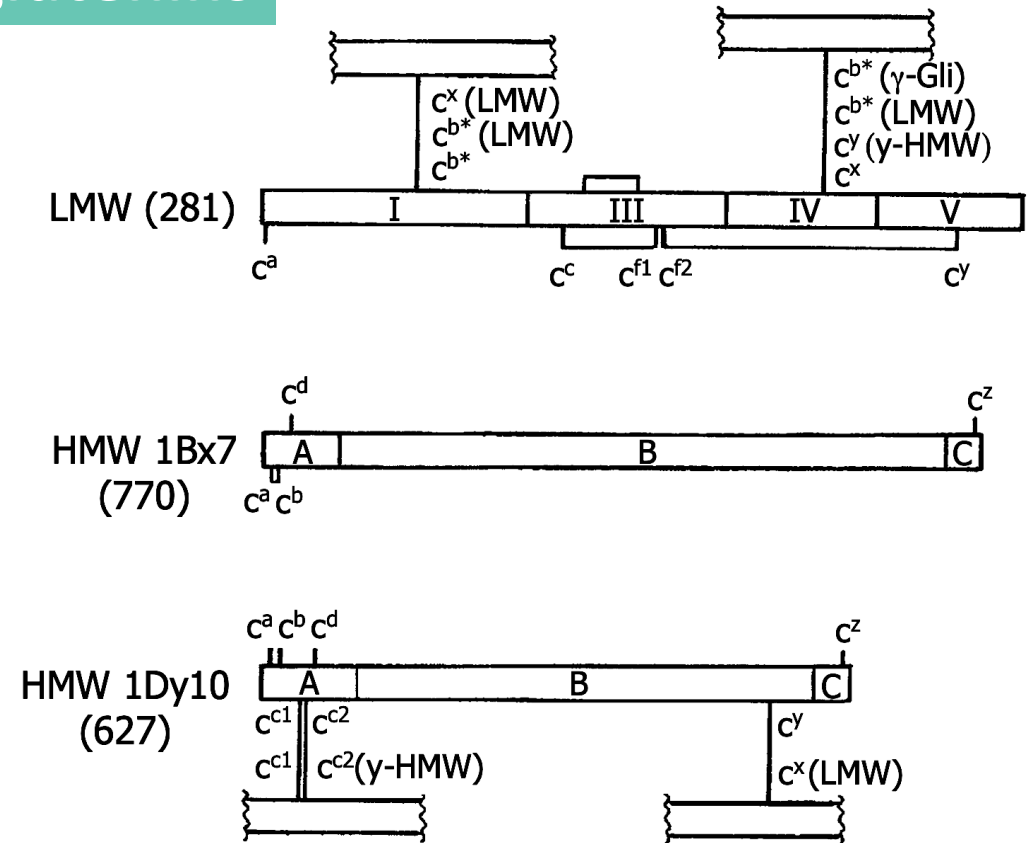


Schematic architecture of gluten proteins

gliadins

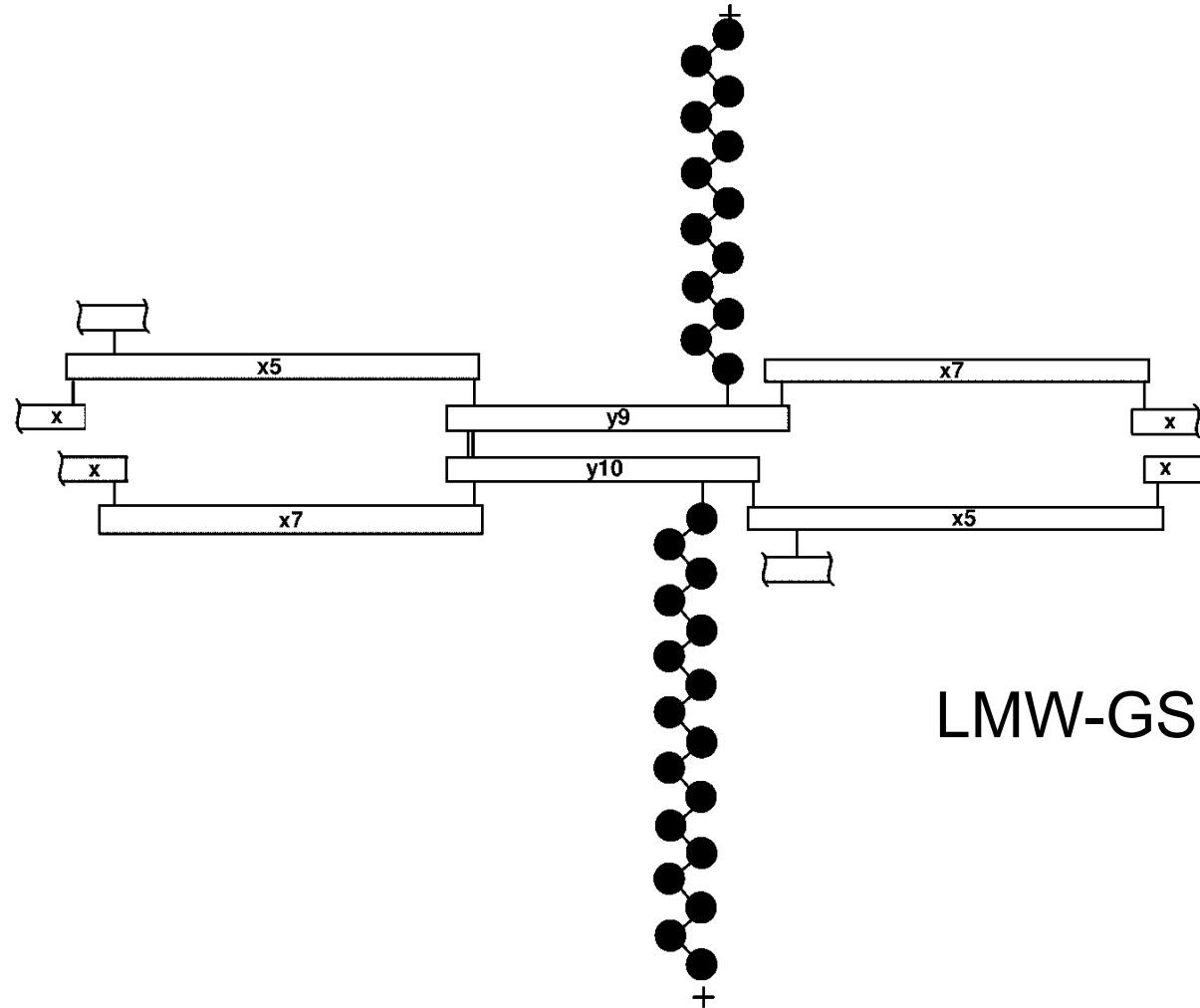


glutenins





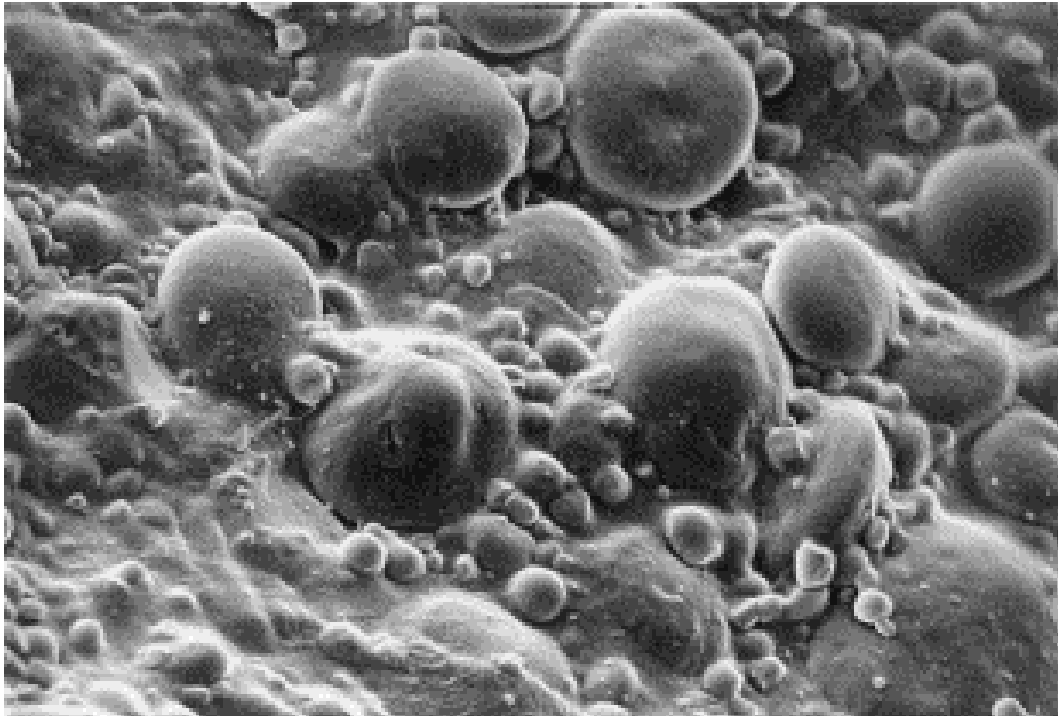
Gluten polymerisation



LMW-GS (●) and HMW-GS (■)

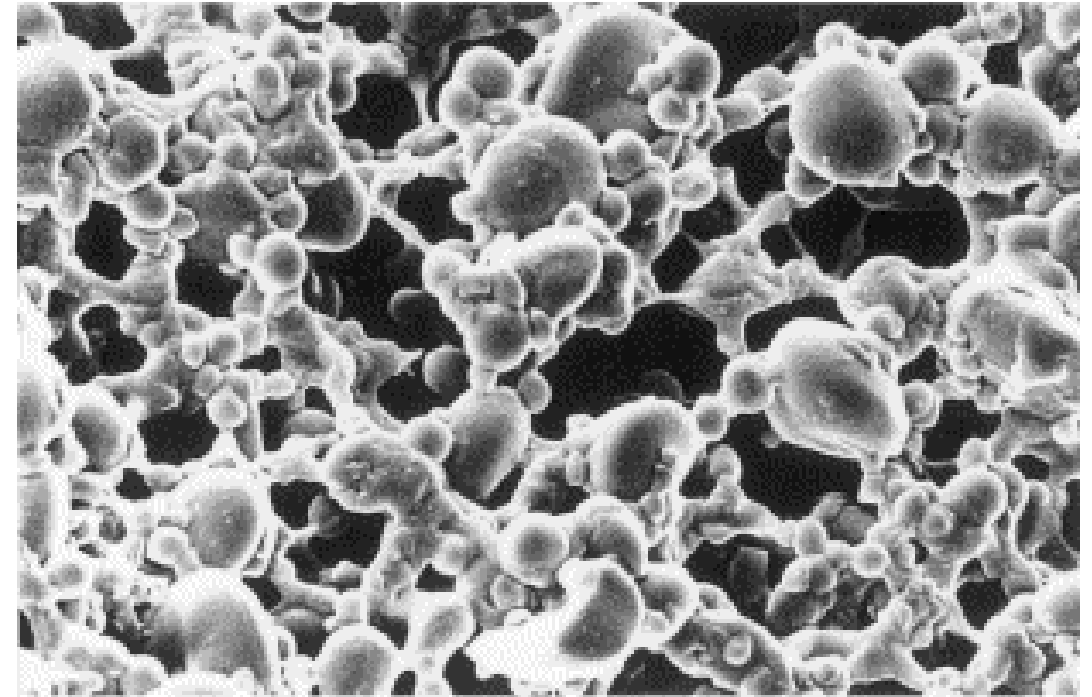


Gluten structure: Electron Microscopy Outline



(a)

normal flour

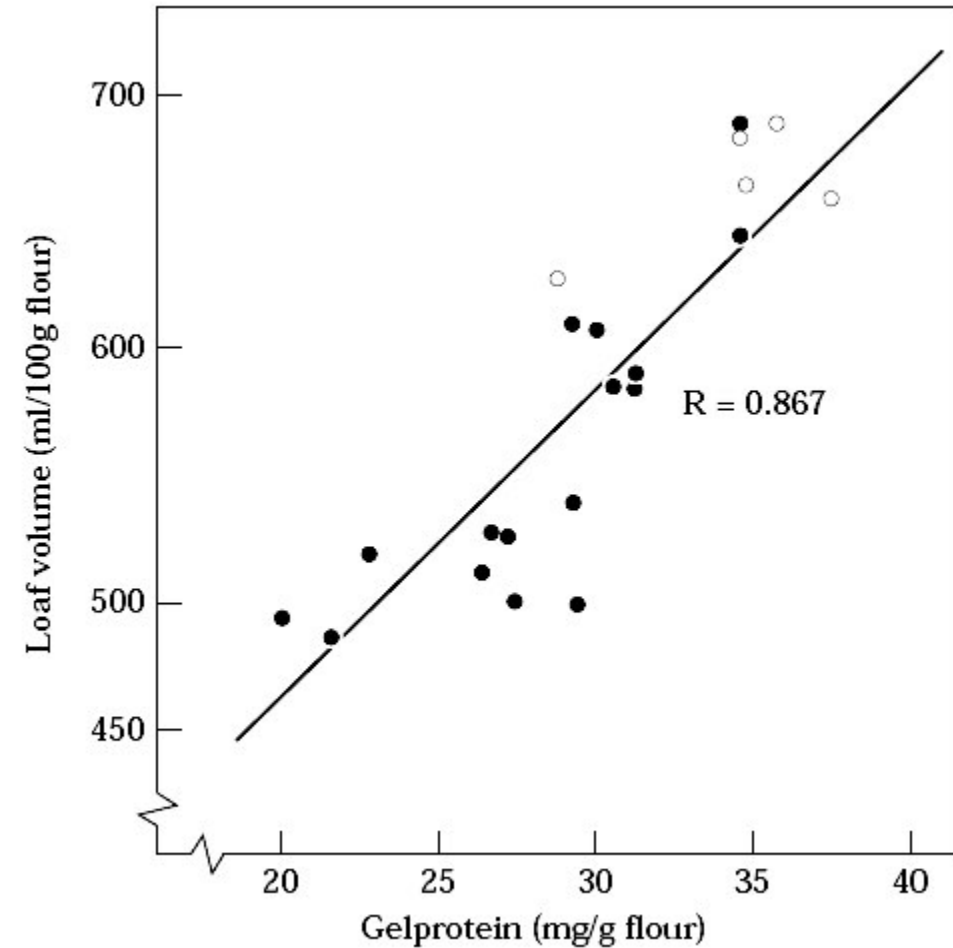
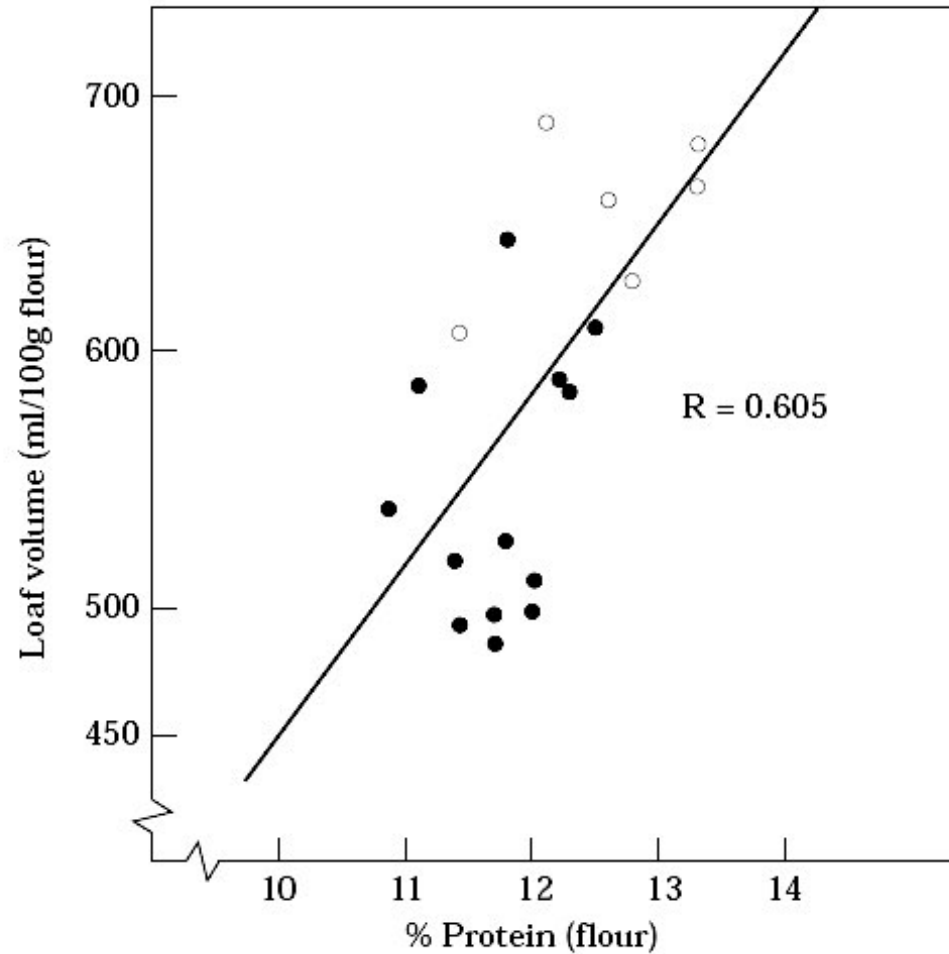


(b)

flour devoid of HMW glutenin subunits



Flour protein: correlation to wheat bread volume





Microbial Production of Glutathione and Bread Quality

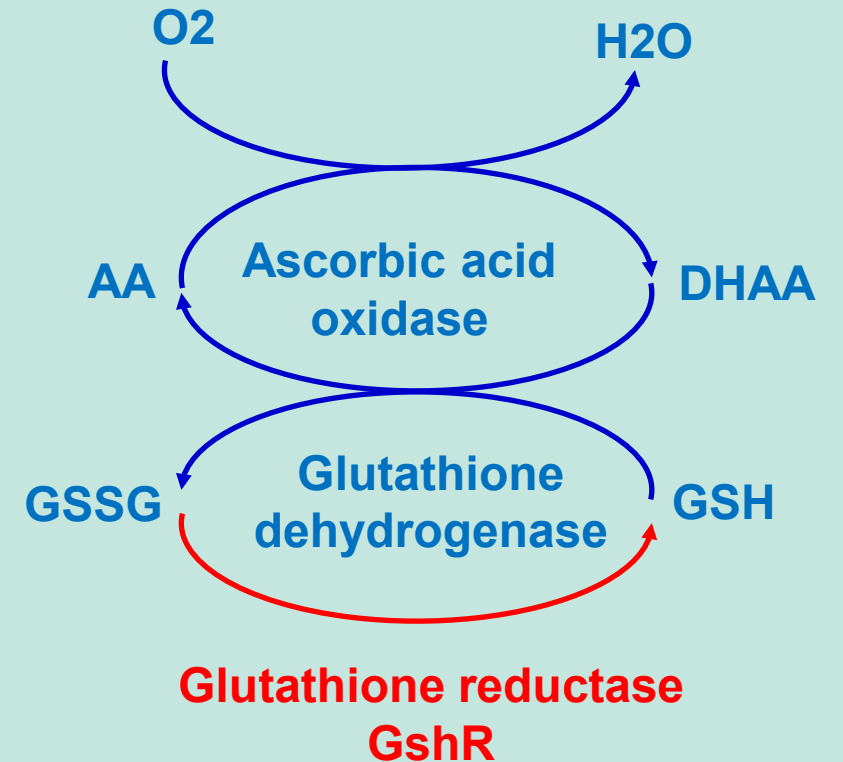


Type I sourdough with
F. sanfranciscensis $\Delta gshR$
strain lacks GshR
2.80 mL g⁻¹



Type I sourdough with
F. sanfranciscensis
strain has GshR
2.43 mL g⁻¹

Wheat enzymes





Summary

Gluten proteins provide the unique baking quality to wheat.

Growth conditions on the Canadian Prairies yield wheat with a high gluten content

Sourdough fermentation alters gluten properties without compromising the baking quality of wheat flour

Thanks to the team in the Food Micro Laboratory
and the funding agencies!

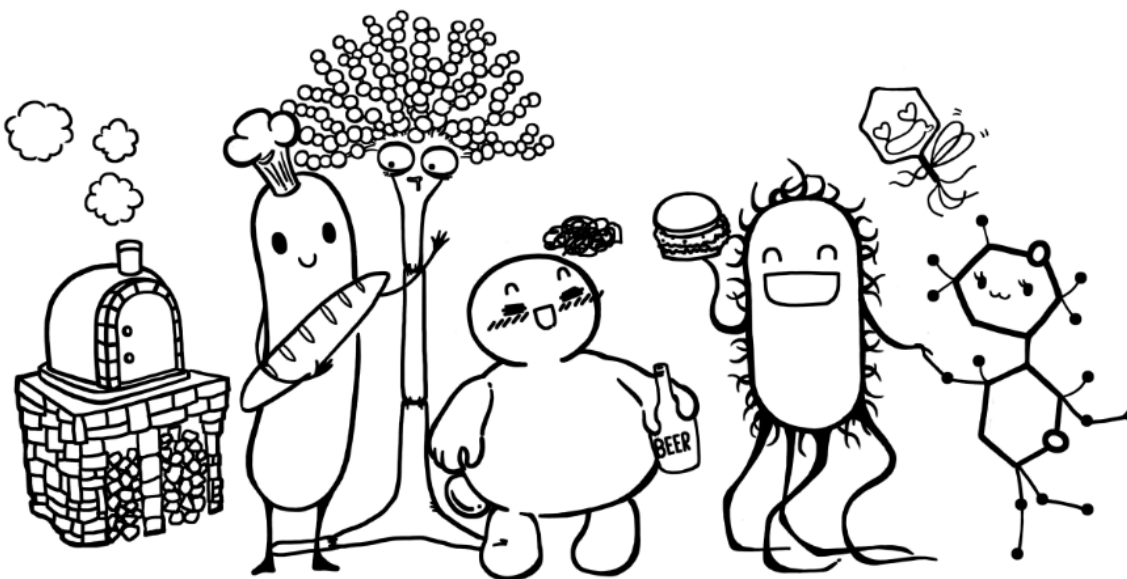
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Alberta Grains



Food microbiology lab 2-50
By: Lingxiao...