UNIVERSITY OF COPENHAGEN
FACULTY OF SCIENCE

# Molecular and Functional Properties of Milk - MFPM

## Group 05 project: Milk Enzymes - Membrane Associated Enzymes

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Link to Git repo.: https://github.com/DanishUnicorn/mfpm_group_05

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# Chapter 1
# Membrane-Associated Enzymes

## 1.1 Introduction

Many enzymes have been identified in milk fat globules (MFGs) and extracellular vesicles (EVs), with advancements in proteomic techniques continuously expanding this knowledge. However, many of these enzymes are present in low abundance and often originate from endoplasmic reticulum (ER), Golgi membranes, or cytosolic remnants. A large proportion remains inactive in milk due to the absence of relevant substrates or a suitable environment. This chapter focuses on sulfhydryl oxidase, catalase, lactoperoxidase (LPO), xanthine oxidoreductase (XOR), $\gamma$-glutamyltransferase (GGT), and 5′-nucleotidase, discussing their relevance in mammary gland biology, milk integrity, and physiological function upon consumption [1].

## 1.2 Classification of Mechanisms of Enzymes

## 1.3 Role of Enzymes in Milk and Dairy Products

## 1.4 Summary of Recent Scientific Studies

## 1.5 Conclusion

# Bibliography

[1] Maria Stenum Hansen and Jan Trige Rasmussen. "Enzymes Associated with Milk Phospholipid Membrane Structures: Milk Fat Globule Membranes and Extracellular Vesicles". In: *Agents of Change: Enzymes in Milk and Dairy Products*. Ed. by Alan L. Kelly and Lotte Bach Larsen. Cham: Springer International Publishing, 2021, pp. 127–161. ISBN: 978-3-030-55482-8. DOI: 10.1007/978-3-030-55482-8_6. URL: https://doi.org/10.1007/978-3-030-55482-8_6.