

## Biopeptides Derived from Whole Milk Fermentation by Co-culture of *Lactacisbacillus casei* (LBC 237) and *Limosilactobacillus fermentum* (LBF 433): Peptidomics of Peptides with Potential Anti-inflammatory Activity

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### Introduction

Bioactive peptides with anti-inflammatory activity have garnered growing interest due to their therapeutic potential in modulating the inflammatory response and as alternatives to traditional anti-inflammatory drugs. Frequently derived from food proteins, these peptides are released through hydrolysis and act on specific molecular pathways, such as COX-2.

This study aimed to identify the peptidomic profile associated with the biochemical properties of these biopeptides using milk fermentation through bacterial co-culture.

### Results

#### Generality of peptides

730

Peptides were identified

50,41%

Showing anti-inflammatory potential

84

Peptides were initially selected based on hydrophobicity similar to that aspirin

10

Final biopeptides through rigorous screening for anti-inflammatory activity, low allergenicity, absence of toxicity, and good water solubility, were selected

#### Peptidomic

Peptidomics of the 10 selected peptides

Parameter	Value
Average number of fragments	11.8
Average molecular mass	1400.26 Da
Isoelectric point (pI)	7.01
Average hydrophobicity	52.36%

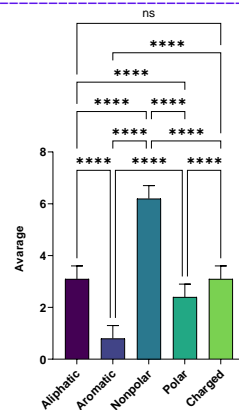
### Methods

The peptides were obtained through milk fermentation using a bacterial co-culture. Following identification through biochemical techniques, *in silico* tools were employed to identify the peptides, verify their biochemical properties, and assess the bioactivity of the molecules obtained.

### Conclusion

These findings indicate the potential of biopeptides as safe and effective therapies, modulating inflammatory responses without adverse effects.

#### Amino acid composition



### References

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