

## Hypothesis and goals

Recording the status of donkey milk as a functional food by its distinctive features in composition and properties could provide health benefits to the consumer.

The most important features are:

- Hypoallergenic protein features
- Protection against bacterial and viral capacity modulation of the growth of the intestinal flora
- Antimicrobial action and the ability to improve treatment of immunological diseases
- Prevention of cardiovascular disease by essential fatty acids

## Introduction

Functional foods are a large and diverse group of foods that provide a benefit to health beyond basic nutrition

### Gross composition of mature milk from different mammals

|                        | SPECIES |        |        |         |         |
|------------------------|---------|--------|--------|---------|---------|
|                        | HUMAN   | DONKEY | HORSE  | COW     | BUFFALO |
| Total dry matter (g/l) | 107-129 | 88-117 | 93-116 | 181-200 | 157-172 |
| Proteins (g/l)         | 9-19    | 14-20  | 14-32  | 30-39   | 24-47   |
| Fat (g/L)              | 21-40   | 3-18   | 3-42   | 33-54   | 53-90   |
| Lactose (g/l)          | 63-70   | 58-74  | 56-72  | 44-56   | 32-49   |
| Ash (g/l)              | 2-3     | 3-5    | 3-5    | 7-8     | 8-9     |
| Energy (kJ/l)          | 2843    | 1705   | 1993   | 2776    | 4511    |

## FUNCTIONAL ASPECTS

### INFANTS WITH FOOD ALLERGIES

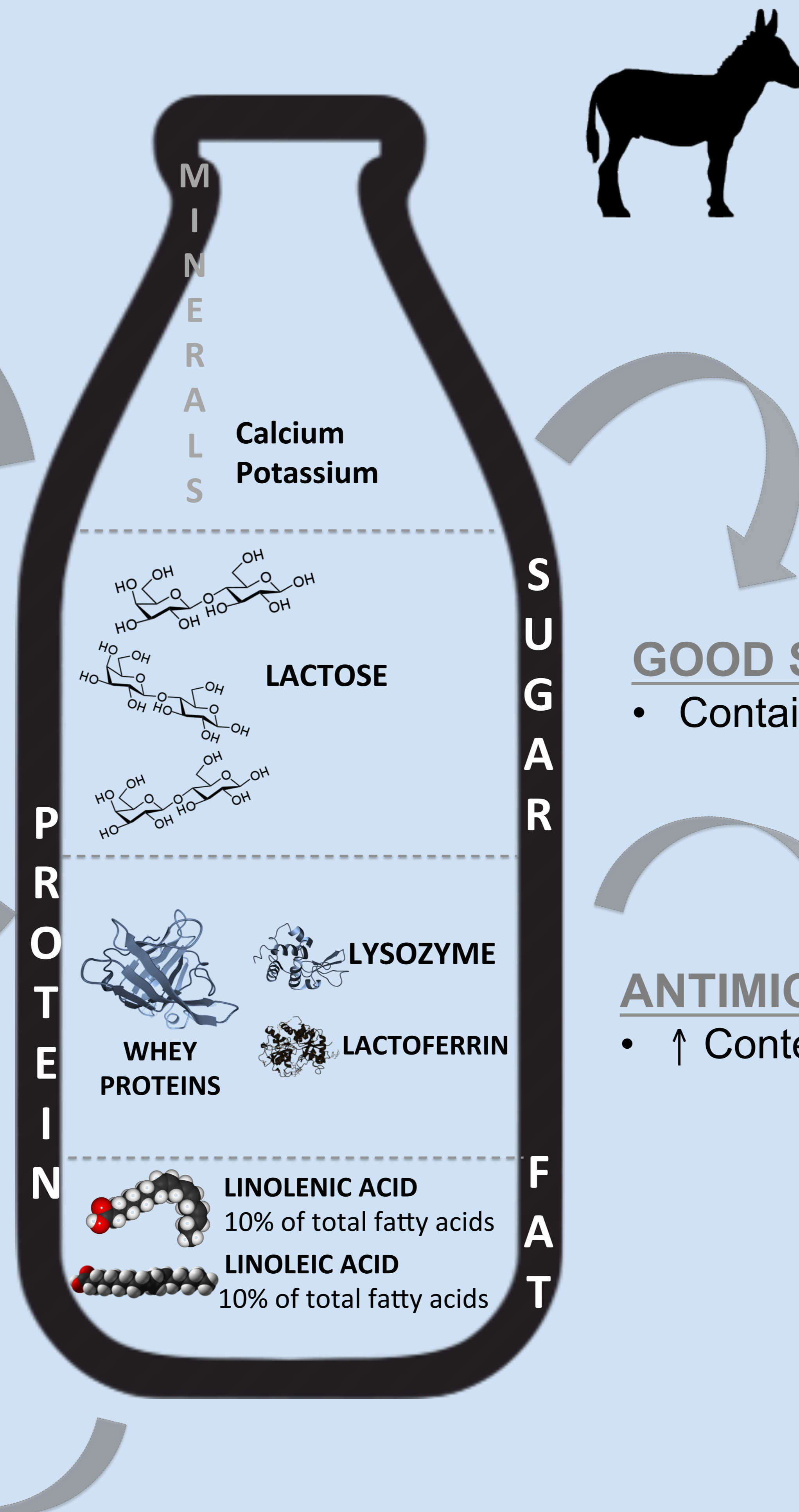
Cows' milk protein allergy (CMPA)

- Nowadays prevalence 3%,
- ↑ Lactose:
  - Palatability
  - Optimising the intestinal absorption of calcium
- ↓ Caseins:
  - Hypoallergenic feature because of the whey proteins content

### PREVENTION OF CARDIOVASCULAR DISEASE

Nutritional benefits

- Low in saturated fats and cholesterol
- Source of essential fatty acids
- Linolenic acid metabolism functions
- Linoleic acid is involved in cardiovascular disease prevention



### ENVIRONMENTAL ADVANTAGES

- Biodiversity
- Expansion of production
- Maintaining forested areas
- Low fire risks
- Stability in the ground
- Km0
- Rural tourism

### GOOD SOURCE OF MINERALS

- Contains three times more than cow's milk

### ANTIMICROBIAL ACTION

- ↑ Content in lysozime and lactoferrin
  - Low microbial count
  - Inhibitory capacity of milk against bacterial species
  - Promotes the body's immune activity

## Conclusions

- This confirms the hypothesis. You can consider donkey milk as a functional food by their distinctive features in composition and the beneficial properties provided to consumer health. So this review concludes:
- On the composition similar to human milk and low allergenicity food is a good alternative in children allergic to cow's milk protein.
- For lactose high amount and therefore the capacity modulation of the growth of the intestinal flora offers protection against bacterial and viral infections.
- The high lysozyme content provides antimicrobial action in donkey milk, which is applicable in immunological diseases and treatments affect the ability of these improvements.