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What is A2 protein milk?

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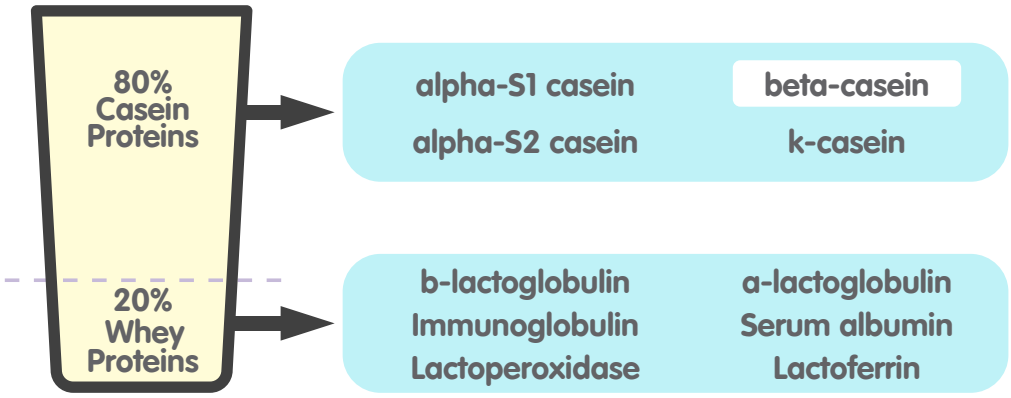
Cow's milk contains protein composed of **whey (20%) and casein (80%).** Of the casein protein, there are different types (alpha, beta, kappa casein)[1,2] and of the beta-casein, there are several types' with **A1 and A2 beta-casein being the most prevalent**[3]



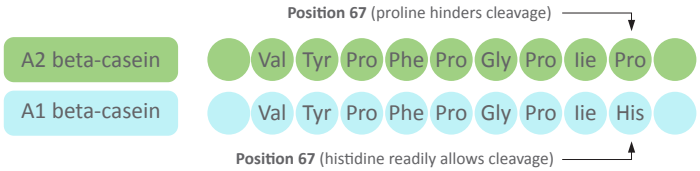
Where did A2 protein milk come from?

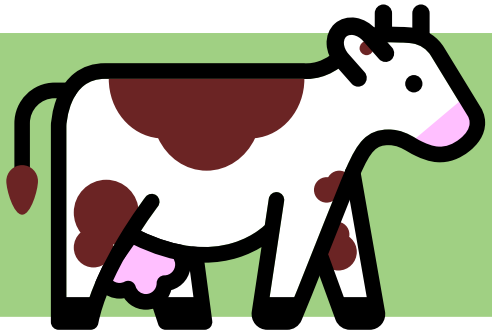
Cows can produce milk that is only A1 or only A2 beta-casein, but most cows produce a mixture of A1 and A2 beta-casein in their milk[4]

A2 protein milk is simply milk that comes from cows **that only produce** A2 beta-casein. These cows are **carefully selected and DNA tested** to ensure that they are only A2 beta-casein producers

What makes A2 protein milk different?

A1 and **A2** protein milk are nearly identical apart from the position of one amino acid in the beta-casein protein chain: **A1 has histadine at position 67** in the chain, and **A2 protein milk has proline**[4,5]





Cows that naturally produce mainly A2 protein milk include the Guernsey breed[4]

It is thought that **these types of cows were the original producers of A2 beta-casein** thousands of years ago, and at some point in history there was a genetic change that led to the production of A1 beta-casein[6]

Human milk contains only **one variant of beta-casein**, known as human milk beta-casein[7]. Human milk beta-casein, like A2 protein milk, **also has proline** at the same position[8]

When these beta-casein protein chains are broken down, shorter peptides are produced, which have differences in their digestion between the **A1** and **A2** protein milk peptides[9]

The research into **A2 protein milk is still in its infancy**. Some initial studies suggest that **A2 protein milk may reduce digestive symptoms in adults**. These studies include adults with self-reported symptoms of digestive discomfort on drinking cow's milk[10-12]

References

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