

Amino acid metabolism and flavour formation in *Lactococcus lactis* as affected by environmental conditions

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Food fermentation by lactic acid bacteria is important for the industry because it is the natural way for delivering functional, healthy and biologically produced components into food products. One important functional property of food concerns its flavour characteristics. As the network of flavour formation due to amino acid metabolism, however, is very complex our research is focussing in particular on the formation of volatile compounds. The emphasis is on a broad spectrum of volatiles caused by amino acid metabolism instead of the production of one specific product or metabolic pathway. A wide variety of environmental conditions is studied in a high throughput design using *L.lactis* MG1363 as the model organism. As fermentation conditions may strongly effect microbial metabolism, these fermentations are carried out in well defined chemical media. Environmental conditions with a significant effect on volatile formation will also be tested using other *Lactococcus* strains in order to extend our knowledge regarding general or specific effects of environmental conditions on flavour formation by lactic acid bacteria. This knowledge will be used to develop models which will give insight in the coupling of environmental conditions to flavour formation. Industry can use this knowledge to steer the process of flavour forming in their products and develop novel fermented foods.