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► To cite this version:

Micheline Dsamou, Olivier Palicki, Chantal Septier, Isabelle Séverin, Marie-Christine Chagnon, et al.. Salivary proteome and sensitivity to bitterness. 5. Congrès international goût-nutrition-santé, Mar 2010, Dijon, France. 1 p., 2010. hal-01137080

HAL Id: hal-01137080

<https://hal.science/hal-01137080>

Submitted on 8 Mar 2017

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Salivary proteome and sensitivity to bitter taste

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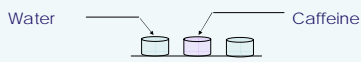
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Introduction

Among the various factors that dictate food choices, the sensorial acceptability and the in-mouth perception of food are essential. For example, bitterness is partly responsible for the rejection of some vegetables by some consumers. In this study, the aim is to evaluate if the salivary environment of an individual plays a role in his sensitivity to bitter taste.

Materials & Methods

Measurements of sensitivity thresholds to caffeine NF 13301



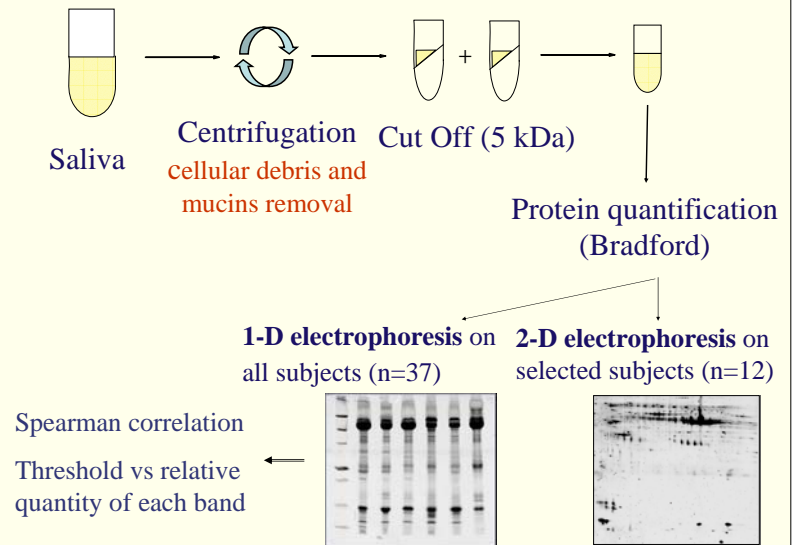
BET test (best estimated threshold)

10 Series of 3 glasses, 2 containing water and 1 containing a solution of caffeine (0.05mM to 8.7 mM), were given to the subjects.

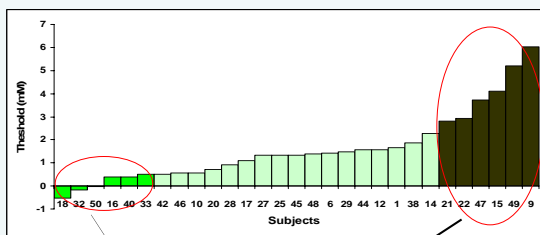
Once the BET calculated, 6 repetitions of 5 concentrations adapted to their BET were given to the subjects.

➔ Their sensitivity threshold to caffeine was calculated.

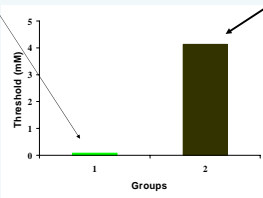
Saliva analysis



Sensitivity Thresholds

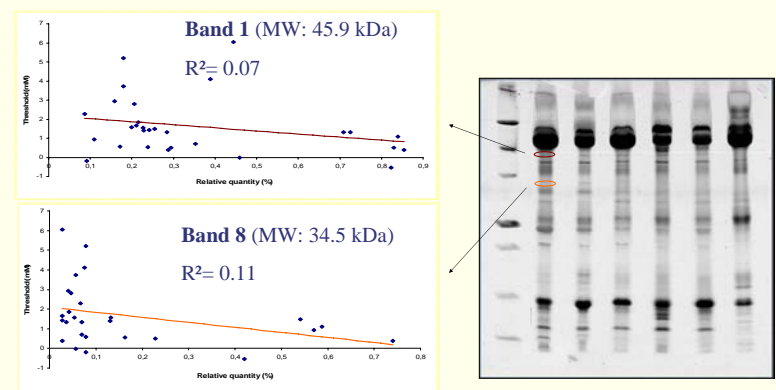


Most sensitive subjects
Mean: 0.09 mM



Least sensitive subjects
Mean: 4.13 mM

Threshold vs relative quantity of bands



5 out of 27 bands are correlated ($p < 0.05$) with sensitivity threshold. These bands will be identified by mass spectrometry.

Perspectives

Identification by 2-D electrophoresis of protein biomarkers of the sensitivity to the bitter taste of caffeine in the twelve selected subjects.

Identification of the underlying biochemical mechanisms by studying the expression of these proteins in human salivary gland cells (HSG cells) exposed to bitter molecules.