

## Categorical evaluation of Umami perception in Europe

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The umami taste has been known for more than 100 years [1]. Although taste researchers have known about Ikeda's work for decades, it is only recently that umami has gradually gained wider public recognition as the fifth primary taste, distinct from the other four basic tastes. Recent progress in molecular biology identified umami taste receptors in tongue's taste buds. Umami taste is elicited by L-glutamate, typically as its sodium salt, the monosodium glutamate (MSG), some amino acids and purine nucleotides [2]. MSG is found in a wide range of foods (e.g. meat, fish, tomatoes, soy sauce, potatoes, parmigiano cheese, and mushrooms). Despite that, in European countries umami taste is not generally included in taste evaluation methods, because it has been found to be hardly conceptualized by the European population [3]. On the other hand, Japanese subjects are familiar with this taste because they ordinarily eat foods rich in umami substances such as dashi, a broth made of kelp (L-glutamate) or dried bonito flakes (inosinate) [4]. In addition, in Japan methods to assess umami taste sensitivity by means of MSG have been developed and currently clinically used [5]. To the best of our knowledge, a comprehensive survey evaluation of umami perception on European countries is lacking. On the basis of these premises, the goal of this study was a survey on the umami perception among different countries and cultures in Europe. For that reason, we chose three countries representative of northern (Finland), central (Germany) and southern Europe (Italy). Each group included respectively 300, 271 and 252 samples. In this point of view, we aimed to collect the categorical descriptors naturally expressed from volunteers just after the tasting of an Umami solution alone and also in comparison with a salty and water solution together with the hedonic value perceived. Here we report and discuss the correlations among responses in the three different countries.

### References

- [1] Ikeda K. 1909
- [2] Shigemura et al., 2009
- [3] Landis et al., 2009
- [4] Satoh-Kuriwada, 2012
- [5] Sato-Kuriwada et al., 2014

### Key words

Taste, umami perception, European countries.