



history ... discovery and development

It was at the beginning of the twentieth century that Professor Kikunae Ikeda, from the Tokyo Imperial University, first identified the unique taste of glutamate. He observed that there was a taste, common to many savoury foods, which did not fall into the category of the four well-known tastes of sweet, sour, bitter and salty. Professor Ikeda called this new taste "umami".

Through his experiments with broth prepared from kombu seaweed (an ingredient in traditional Japanese cuisine) Professor Ikeda identified glutamate as the source of "umami" and decided to make a food seasoning. He found that monosodium glutamate, the sodium salt of glutamate, was ideal for this purpose as it had no smell or specific texture of its own. It could therefore be used in many different dishes to enhance the original flavour of food. Since then, monosodium glutamate has been widely used as an effective means of making good food taste better. Today, monosodium glutamate is produced through fermentation – a process similar to that used in making beer, soy sauce, vinegar and yoghurt. The process uses natural products such as molasses, sugar cane or sugar beets and food starch from tapioca or cereals.



Professor Kikunae Ikeda

glutamate in food

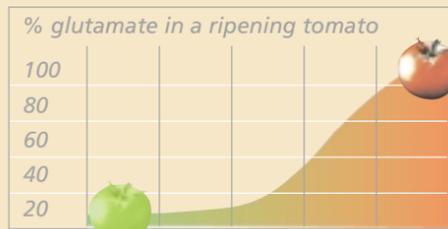


... naturally occurs in what we eat

free glutamate from food per 100g	
scallop	140mg
beef	33mg
tomato	140mg
corn	130mg
chicken	44mg
parmesan cheese	1200mg
mushrooms	140mg

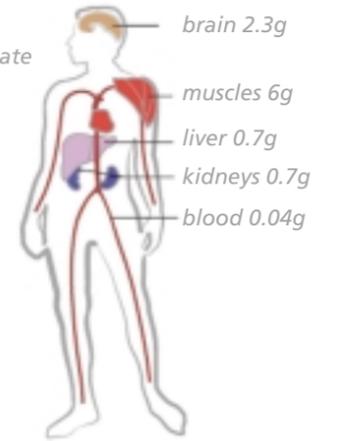
Glutamate is a natural part of protein-containing foods such as meat, vegetables, poultry and milk. It is found in two forms: "Bound" glutamate which is linked to protein, and "free" glutamate which is not linked to protein. Only free glutamate improves the flavour of food. When glutamate is added to foods, it provides the same flavour as the glutamate that occurs naturally.

You may not immediately recognise the taste of glutamate in food. However it is the naturally occurring "free" glutamate in Parmesan cheese, ripe tomatoes and mushrooms that gives these foods their distinctive flavour. This unique savoury taste is an integral part of cuisines around the world. It is found in the bouillons of Europe, the oyster sauces of China, the soy and fish sauces of south-east Asia, the pizza and lasagna of Italy and the chowders and stews of America.



glutamate in our bodies

our bodies naturally contain about 10 grams of free glutamate



... a natural part of our metabolism

Glutamate is a natural part of our metabolism and is actually produced by the human body in amounts of about 50 grams per day. Almost 2 kilograms of naturally occurring glutamate is found in muscles, the brain, the kidneys, the liver and other organs and tissues. These organs also contain smaller amounts of free glutamate. In addition, glutamate is found in mothers' milk at much higher levels than in cows' milk.

The average person consumes between 10 and 20 grams of bound glutamate and about 1 gram of free glutamate from food each day. Dietary glutamate is our main energy source for the intestines. Our digestive system makes no distinction between glutamate from foods such as tomatoes and glutamate from flavourings. Research has shown that glutamate from whatever source is important for the normal functioning of the digestive system.





benefits of glutamate

... contributes to all round health

Because glutamate is the source of the unique taste of umami, it enhances the natural flavour of many foods. It is most effective when used with savoury foods that contain protein such as meat and vegetable dishes. It also harmonises well with salty and sour tastes making glutamate effective in various sauces and dressings. Glutamate can also contribute to our overall health. Salty and fatty foods appeal to most of us because of their flavour, but it is generally recognised that a high-fat and high-sodium diet can contribute to the risk of coronary heart disease and other health problems. Monosodium glutamate (MSG) contains about one third of the amount of sodium of table salt. Although glutamate is not salty itself, using a small amount of MSG in a low sodium product can make it taste as good as its higher salt counterpart.

Taste tests have shown that when the salt level in food is reduced, food acceptability decreases. However, by using a small amount of MSG and a low level of salt, an acceptable flavour profile can be maintained, while sodium content can be reduced by as much as 30%.



approvals

... tested the world over

Since its discovery in 1908, monosodium glutamate has been used safely and effectively in the food supply. Because it is a widely used food ingredient, a great deal of research has been completed on its safety and efficacy. In the United States, MSG is included in the Food and Drug Administration's list of substances that are Generally Recognized as Safe (GRAS). Foods designated as GRAS include ingredients like sugar, baking powder and vinegar.

An extensive body of research which has been reviewed by scientists and governments around the world, including the United States Food & Drug Administration, the American Medical Association, experts of the United Nations Food and Agriculture Organization and the World Health Organization and the European Commission's Scientific Committee for Food demonstrates that glutamate is safe.

for more information visit us on the web:

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glutamate
... the facts



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