Chili pepper and pungent spices

This is the title of a conference organized Monday, May 5th at the hall Leonardo of the East Sesia from Club Donegani. To deal with the issue was not an experienced chef of pots and pans, but Giovanni Appendino, Professor of Organic Chemistry at the Faculty of Drug Science of the University in Novara. As highlighted by the president of the Club Donegani Luigi Abis in the presentation of the speaker, Professor Appendino is a chemist that has acquired an international reputation for the many research works on natural products that can have a pharmaceutical relevance. Among these is the chili that besides being appreciated for its culinary qualities, manifests a number of beneficial properties for the body.

Discovered by Columbus and imported from the Americas, is the world's most popular pungent spices. It is estimated that the area planted with chili in its many variations is equal to the area of Switzerland.

The secret of the properties of the chili comes from the interaction of two factors: capsaicin, the active ingredient that gives the feeling of biting, and the receptor TRPV1, or if we want the sensor to the latter, present in the palate but also in other organs. Contrary to popular belief the highest concentration of capsaicin are not in the seeds (8%), but in the white flesh inside called placenta, about 86%, while a more modest 6% is located in the outer shell, the pericarp. The receptor is also a temperature sensor and is activated when it comes in contact with source temperatures greater than 41 degrees. Capsaicin, having the particular property of lowering temperature threshold, causes a burning and pain sensation also at lower temperatures and in the absence of hot substances; but beware, it's just a message sent to our brain which does not correspond to any physical damage to the mucous membranes of our palate. A continual request of the receptor leads to desensitization and greater tolerance of both the spicy and the pain.

Basically the physiological reaction of the organism and the interaction between capsaicin receptor determines the multiple properties of chili. From the gastronomic point of view enhances the flavors including savory, promotes digestion, accelerates fat metabolism and being an antioxidant prevents rancidity; not only that, it makes abundant use in hot climates because it has the unexpected ability to lower the body temperature due to strong sweating and vasodilatation that causes. And is demonstrated that ,owing to different hormonal factors, women are much more sensitive than men to the spicy flavor of capsaicin and young people much less than adults.

By the way, there is a way to soothe the burning sensation caused by the chili? Certainly not the water in which is not soluble or much less than carbonated that amplifies the effect, but based foods with fat and casein, such as cheese, yoghurt etc.

But capsaicin chili also has medical applications. In fact it is used in pharmaceutical preparations against neuropathy, rheumatoid arthritis, cluster headache, pruritus, urinary incontinence, irritable bowel syndrome and as a nasal decongestant.

Professor Appendino has also traced a brief history of hot spices like chili used before its discovery. They range from the legendary *Silfion*, sought by the Romans who made extensive use in the kitchen and disappeared in the first century AD, to the very disgusting *Asafetida*, the only allowed for religious reasons in Indian cuisine, to finally arrive at the celebrated english *Worcestershire* sauce derived from Indian and at the less known sardinian *Ferula*.

It is curious that among mammals, man is the only one to appreciate the pungent properties of chili. This is presumably due to the so-called roller coaster. In practice we experience the satisfaction deriving from a "constrained risk", a typical risk of a potentially harmful situation but lived in a secure environment.

In conclusion, the report outlined the chili as a food and medical multifaceted product , that has always fascinated man who continues in the time to research their more hidden properties. Nevertheless, many aspects are still shrouded in mystery; one for all: why the capsaicin receptor, a molecular thermometer, is also found in the brain and other organs such as the prostate and bladder, where the temperature is constant and never changes?

The conference has attracted great attention in the participants, that in the final debate showed a

strong curiosity and desire to deepen arguments of this type.
The next conference of the cycle Food and Health will be held June 16th always in the room Leonardo of East Sesia at 9.0 pm by Dr. F. Pollastro of the Faculty of Drug Science of the University of Novara, which will face under a similar profile the theme of Bitter Liquors .
All information on conferences of Club Donegani can be found in the site
WWW.CLUBDONEGANI.IT.

The President of the Club Donegani
Luigi Abis