**Calcium plays role in taste perception**

A new study, published in the *Journal of Biological Chemistry*, says that various extracellular calcium-sensing receptor (CaSR) agonists enhance sweet, salty, and umami taste, although they have no taste of their own. These characteristics are known as “kakumi taste” and it often appears in the Japanese cuisine.

The researcher Yuzuro Eto and his colleagues found that calcium and certain calcium channel activators trigger calcium channels located on the tongue, enhancing a specific taste. Further, it was found that glutathione (a common kokumi taste element) has no taste of itself but can enhance the basic taste sensation by interacting with these channels. The researchers believe that their study will pave the way in creation of healthy foods with minimal sugar or salt but, can still elicit strong taste.

**First vaccine for treating gum disease**

“Periodontitis is a serious disease and dentists face a major challenge in treating it, because most people will not know they have the disease until it’s too late and the infection has progressed to advanced stages,” says Prof. Eric Reynolds, CEO of the Cooperative Research Centre for Oral Health Science and the Head of the University of Melbourne’s Dental School. “This new approach will provide dentists and patients with a specific treatment.”

Traditional periodontal therapy involves manual scaling and cleaning, and even surgery with instruments or dental lasers in an effort to contain the bacterial infection. Reynold said that their new line of vaccine products will possibly prevent the progression of the disease, rather than managing its symptoms and damaging consequences. Sanofi Pasteur has an option, to an exclusive worldwide licence, to commercialise the intellectual property associated with these products.

A new vaccine could help to replace traditional periodontal treatment methods. (DTI/Photo Dmitry Naumov)

**Painless plasma jets could soon replace dentist's drill**

Dr Stefan Rupf from Saarland University, who led the research, said that the recent development of cold plasmas showed great promise for use in dentistry. “The low temperature (around 40 degrees Celsius) means they can kill the microbes while preserving the tooth. The dental pulp at the centre of the tooth, underneath the dentin, is linked to the blood supply, and nerves and heat damage to it must be avoided at all costs.”

Plasmas have an increasing number of technical and medical applications. Hot plasmas are already used to disinfect surgical instruments. “Presently, there is huge progress being made in the field of plasma medicine and a clinical treatment for dental cavities can be expected within 3 to 5 years,” Dr Rupf added.

“Combination remedies are best for smoking cessation”

A study, published in the Archives of Internal Medicine, says that the combined therapy with bupropion and nicotin lozenges, for smoking cessation, is better than any monotherapy. The study compared six-month abstinence rates among 1,546 smokers after treatment with five active pharmacotherapies—bupropion alone, lozenges, nicotine patch, nicotine patch & lozenge, and bupropion & lozenge. Combined pharmacotherapy of bupropion & lozenges was found to be superior to the abstinence rate of 29.9% followed by nicotine patch & lozenge combination with the abstinence rate of 26.9%. The nicotine patch alone was found to be least effective. These results reinforce the conclusion drawn from previous studies on efficacy of such a combined approach.