

A drug-free approach for infections

A patch against germs?

Researchers at the University of Chicago and San Diego have developed a bioelectronic patch that could pave the way for a drug-free approach to treating infections, reports zm. The study shows how programmable electrical stimulation can effectively reduce the harmful effects of *Staphylococcus epidermidis*, a bacterium known to cause hospital-acquired infections. The device delivers gentle electrical signals to the bacteria based on the pH value of the skin, causing temporary changes in behaviour and preventing the formation of biofilm clusters, the University of Chicago said in a press release. This electrical stimulation significantly reduces the activity of harmful genes in the bacteria and slows down their growth.



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In preclinical tests, the patch showed remarkable results, achieving an almost ten-fold reduction in bacterial colonisation on pig skin. “We discovered action potentials in bacterial biofilms almost ten years ago and have since worked to show that bacteria, which are not normally thought to be excitable, in fact are excitable and even perform similar functions to neurons in the brain”, said Professor Gürol Süel from the San Diego School of Biological Sciences. The innovative approach addresses the urgent need for new methods to combat antibiotic-resistant infections, which are a growing problem for patient safety and healthcare systems worldwide. The researchers see their innovation as an important step in bioelectronic medicine and are optimistic that this device could soon be used in clinical settings, particularly for patients with chronic wounds or who have medical implants.

Source: zm, 5 November 2024; The University of Chicago, 24 October 2024

Kim S, Eig E, Yue J, et al. Bioelectronic drug-free control of opportunistic pathogens through selective excitability. *Device*. 15 Nov 2024; 2(11): 100596. doi: 10.1016/j.device.2024.100596UR.
[https://www.cell.com/device/fulltext/S2666-9986\(24\)00542-8](https://www.cell.com/device/fulltext/S2666-9986(24)00542-8).



EU commission took office on 1 December

After a tough fight



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The new EU commission under President Ursula von der Leyen took office on 1 December 2024. Almost six months after the European elections, the European Parliament in Strasbourg voted to confirm the 26 commissioners, following bitter disputes. The European Parliament in Strasbourg voted 370 out of 688 votes in favour of the team, which consists of 10 women and 16 men from all member states in addition to the German President. This step was crucial for future EU policy: the commission is the only institution in the European Union that can propose Union laws. It also monitors compliance with EU law.

Source: Various

EU health commissioner
designate

Várhelyi presents his goals

Olivér Várhelyi, the EU Commissioner-designate for Health and Animal Welfare, presented his priorities for the first hundred days in office to European Parliament committees in November. One issue he mentioned was the continuation of the Critical Medicines Act, which had already been negotiated by the previous legislation. He intends to make significant progress on this as soon as possible. Another was an action plan to be drawn up to improve the cyber security of hospitals and healthcare providers.

A third pressing issue was better implementation of the Medical Devices Regulation. The commissioner-designate told the hearing that in the short term he wanted to take action to simplify regulation within the existing framework. In particular, he wants to address two areas where there are major bottlenecks— orphan medical devices for small patient groups and paediatric medical devices. He also wants to speed up the evaluation of existing legislation, a task that should be completed next year. At this stage, he has no immediate plans to propose new legislation.

A Hungarian national, Várhelyi has served in various diplomatic positions since the early 2000s. He has had many years of experience in working at the European policy level. Among other things, Várhelyi helped negotiate Hungary's accession to the EU and was Hungary's ambassador to the European Union in Brussels for several years. He is an independent but is seen as a close confidant of Hungarian Prime Minister Viktor Orbán, which had led to criticism in advance. Parts of his portfolio are to be transferred to other commissioners—including those on sexual discrimination and self-determination, according to dpa.

Sources: EU commission; various media

Recommendation from EU health ministers

Outdoor smoking bans

The European Union health ministers have issued a joint recommendation on banning smoking outdoors. However, the recommendation is not binding. In addition to playgrounds and outdoor catering, amusement parks, swimming pools, beaches and zoos, bus stops, universities and open-air events are also in the spotlight for stricter regulations. The EU commission's stated aim is to reduce the proportion of smokers in the population to below five per cent by 2040.

In addition to traditional tobacco smoke, the recommendations also apply to tobacco heaters and electronic cigarettes. Non-smokers and children should also be better protected from their fumes. The decision follows the European Commission's proposal in September to revise the current recommendations on smoke-free zones. However, smoking bans remain a matter for national governments.



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Source: Bayerischer Rundfunk, 3 December 2024