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Bacteria, plants and animals often contain unknown substances that could be beneficial for humans. Researchers at the Max Planck Institute of Molecular Physiology test natural products for their biological efficacy and try to achieve the same effect with simpler molecules.

26 Transporting Toxins to Tumors

Developing drugs that eliminate cancer cells effectively and have few or no side effects – to achieve this goal, scientists at the Max Planck Institute for Polymer Research convert proteins into traceable drug transporters for nanomedicine.

32 The Stuff of Enlightening Diagnoses

Doctors today already often rely on positron emission tomography in cancer diagnostics. In order to use this method on a broader scale, chemists at the Max-Planck-Institut für Kohlenforschung are searching for ways to produce appropriate tracer substances containing fluorine-18.

ON THE COVER Substances that kill tumor cells, such as the prostate cancer cell shown here, while leaving healthy tissue largely unscathed are a challenge not only for biomedical specialists, but also for chemists.

10 Sense of future: Germany needs to expand its fiber-optic network if it wants to remain competitive.

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To ensure Germany's continued economic success, the digital infrastructure and the internet offerings of German public authorities and ministries need to be improved.

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54 Sense of touch: Director Melina Schuh is researching the delicate maturation process of the human egg cell.



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Personal Portrait: Melina Schuh

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Cabbage plants protect themselves against their natural enemies with a mustard oil bomb. Flea beetles, however, can disarm this defensive weapon and even commandeer it for their own protection. Biologists at the Max Planck Institute for Chemical Ecology are investigating how they do this.

CULTURE & SOCIETY

- 68** **Getting the Trolls Under Control**
Whether it's security, environmental protection, infrastructure or the internet, everybody has to play by the rules if we are to reap the benefits of collective goods. Sociologists at the Max Planck Institute for Research on Collective Goods are studying the conditions needed for this to happen – for instance on social media.

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