



nature publishing group



► **COVER:** 'Gut feelings' by Kirsten Lee, inspired by the review on p453.



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**T**his issue opens on page 437 with a Review by Vila and colleagues on rapamycin, an inhibitor of the kinase mammalian target of rapamycin. This agent holds promise as a treatment for disorders such as Alzheimer's disease, as it shows neuroprotection in several experimental models of neurodegenerative diseases. In their article, the authors explore the mechanisms underlying rapamycin's neuroprotective properties, including its effects on autophagy, apoptosis and the translation of pro-death and pro-survival proteins.

Continuing with the pharmacological theme, in a Perspective on page 479, Wise and Kiyatkin examine the rapid nature of cocaine's rewarding properties. In this article, the authors describe recent work that has shown that cocaine-predictive cues can activate the dopaminergic reward system more rapidly than cocaine itself can affect dopamine transporters, providing a possible explanation for the speed of cocaine's effect.

On page 453, a Review by Emeran Mayer explores the progress that has been made in our understanding of the bidirectional communication between the brain and the digestive system. As discussed by the author, such crosstalk not only assures maintenance of gastrointestinal homeostasis and digestion but also can influence memory formation, emotional arousal and affective behaviour.

The final Review in this issue, on page 467, revisits Aaron Beck's influential cognitive model of depression, which asserts that cognitive biases lead to depressive symptoms. In this article, Beck and colleagues discuss neuroimaging data suggesting that top-down and bottom-up neural mechanisms might underlie these biases. On the basis of these findings, they propose a neurobiological architecture of the cognitive model of depression.

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