IN BRIEF

ANTICANCER DRUGS

Inhibition of 11β-hydroxysteroid dehydrogenase type II selectively blocks the tumor COX-2 pathway and suppresses colon carcinogenesis in mice and humans

Zhang, M.-Z. *et al. J. Clin. Invest.* **119**, 876–885 (2009)

Cardiovascular risks associated with selective cyclooxygenase 2 (COX2) inhibitors limit their use in the prevention of colorectal cancer. Zhang and colleagues showed that inhibition of 11β-hydroxysteroid dehydrogenase type II, which inactivates glucocorticoids, inhibited COX2-mediated prostaglandin E2 production in tumours and prevented adenoma formation, tumour growth and metastasis in mice, without causing the cardiovascular side effects seen with systemic COX2 inhibitors.

LEARNING AND MEMORY

Dopamine release in dissociable striatal subregions predicts the different effects of oral methylphenidate on reversal learning and spatial working memory

Clatworthy, P. L. *et al. J. Neurosci.* **29**, 4690–4696 (2009)

Psychostimulants such as methylphenidate are used to treat cognitive dysfunction in attention deficit hyperactivity disorder (ADHD). Imaging studies showed that, in healthy subjects, methylphenidate caused different sized changes in dopamine D_2/D_3 receptor availability in different regions of the human striatum and that the change in receptor availability within an individual subregion was predictive of cognitive performance on a particular learning or memory task. These results could contribute to our understanding of the cognitive-enhancing effects of methylphenidate in ADHD.

HIGH-THROUGHPUT SCREENING

Identification of selective inhibitors of uncharacterized enzymes by high-throughput screening with fluorescent activity-based probes

Bachovchin, D. A. *et al. Nature Biotechnol.***4**, 387–394 (2009)

This paper reports a substrate-free method for identifying inhibitors of uncharacterized enzymes. The fluorescence polarization assay measures changes in the kinetics of covalent active-site labelling in the presence of compounds and can be coupled with secondary proteomic assays that use competitive-activity-based profiling to determine the specificity of screening hits. Using this method, the authors identified an inhibitor of the uncharacterized cancer-associated hydrolase RBBP9.

ANTICANCER DRUGS

Antibody-based targeting of FGFR3 in bladder carcinoma and t(4;14)-positive multiple myeloma in mice

Qing, J. *et al. J. Clin. Invest.* **119**, 1216–1229 (2009)

Qing and colleagues developed an antibody, R3Mab, against fibroblast growth factor receptor 3 (FGFR3) that simultaneously blocked ligand binding, prevented receptor dimerization and induced substantial conformational changes in the receptor. R3Mab exerted potent antitumour activity against bladder carcinoma and t(4;14)-positive multiple myeloma xenografts in mice by antagonizing FGFR3 signalling and eliciting antibody-dependent cell-mediated cytotoxicity.