molecular interventions
pharmacological perspectives from biology, chemistry and genomics

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DEPARTMENTS

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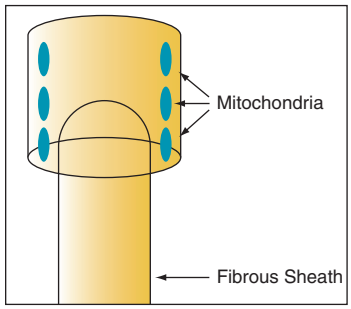

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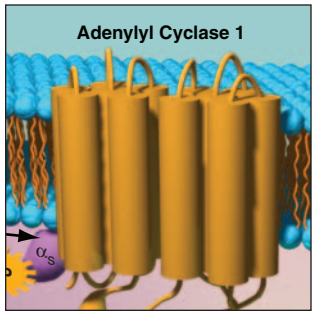
Blocking sperm motility and production

VIEWPOINTS



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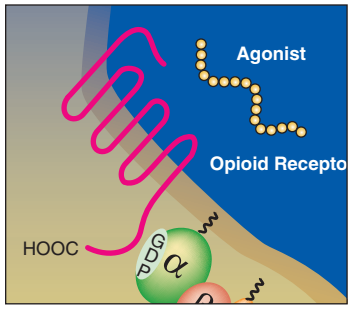
Targeting AC isoforms to ameliorate damage

The use of transgenic animals lacking one or multiple adenylyl cyclase (AC) isoforms has provided significant information on the roles of AC-dependent signaling in the central nervous system. A recent study provides evidence that AC type 1 (AC1) might be important in glutamate-induced neuronal toxicity. However, the absolute AC specificity revealed in this study contrasts earlier work examining other forms of neurodegeneration. Nonetheless, these observations suggest that specific AC isoforms may represent novel targets for the treatment of central nervous system disorders. It is anticipated that such findings will help catalyze new drug discovery efforts to identify small-molecule modulators of individual AC isoforms.

Val J. Watts



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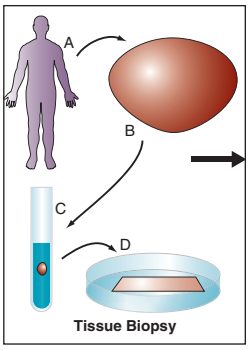
A118G in addiction: An analysis of "variants"

Discovery and characterization of the functional A118G mu-(μ)-opioid receptor variant led to hypotheses, now in part proven, about its role in alterations of endogenous human physiology and in responses to opioid antagonist administration. Differences in cellular expression levels, ligand binding, and signal transduction for variant receptors have been documented in vitro. Human genetic studies also indicate that individuals carrying one or two copies of the 118G allele may have increased risk for opiate and alcohol addictions and that this polymorphism may also explain some of the variability in success of opioid antagonist treatment for alcoholism. Future research will further define the role of the A118G variant in addictive diseases and their treatment, in pain perception and opioid analgesia, and for a myriad of other responses mediated by the μ-opioid receptor.

Mary Jeanne Kreek and K. Steven LaForge

REVIEWS



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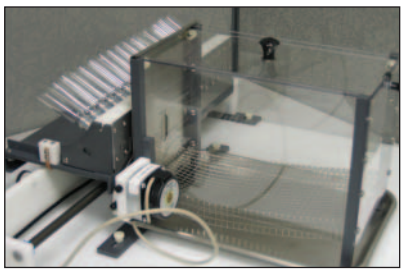
Tissue-engineered organs



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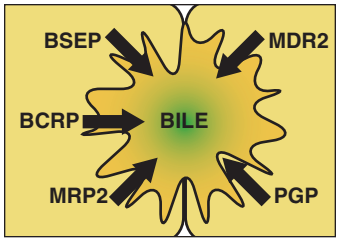
"Chewing the food of sweet and bitter fancy...."



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Inflammatory statements: As easy as ABC (and SLC)