ACS Chemical Neuroscience

In This Issue

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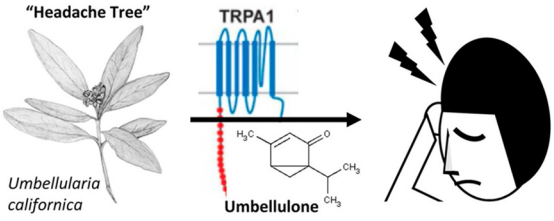
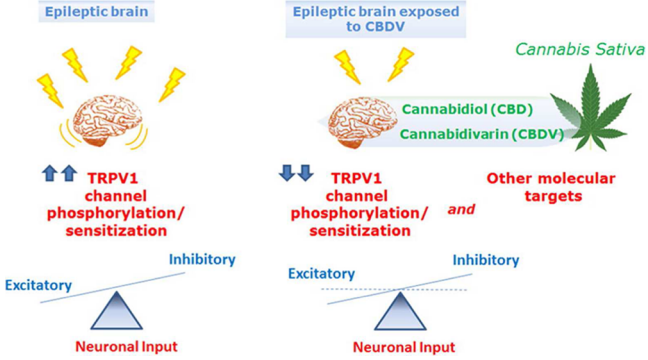
NEW TARGET FOR DEVELOPMENT OF MIGRAINE THERAPEUTICS



The World Health Organization ranks migraine headaches as the third most common disease of the world. With regard to neurological disorders alone, migraines are the single biggest cause of disability. These rankings take into account therapeutic intervention which points to a dearth of treatment options. In the current issue, Dussor et al. (DOI: 10.1021/cn500083e) review a new target for migraine treatment.

The authors summarize the epidemiology, clinical features, and pathophysiology of migraine headaches and then detail the possible role of transient receptor potential (TRP) channels in this condition. In particular, the authors focus their efforts on the TRPA1-dependent pathway.

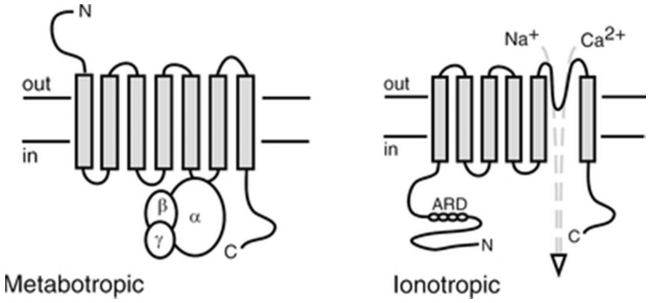
COMPOUNDS WITH ANTIEPILEPTIC PROPERTIES



The Article by Ianotti et al. (DOI: 10.1021/cn5000524) in the current issue focuses on the ability of the cannabis-derived chemicals, cannabidivarin and cannabidiol, to activate TRP channels and potentially modulate seizure-related hyperexcitability. There is considerable interest in the therapeutic potential of both of these phytocannabinoids because they are nonpsychotropic and appear to act in a CB1-independent manner.

Using a heterologous expression system and electrophysiological approaches, the authors show that cannabidiol and cannabidivarin are capable of gating currents and eliciting desensitization in TRPV1, TRPV2, and TRPA. The paper also examines expression of these three TRP channels in the hippocampus. Finally, the authors examine the potential therapeutic potential of cannabidivarin as an antiepileptic. The data shows that cannabidiol and cannabidivarin are capable of activating these TRP channels and represent new alternatives for antiepileptic compounds.

CANNABINOIDS FOR TREATING SENSORY AND DERMATOLOGICAL DISEASES



In this issue, Caterina (DOI: 10.1021/cn5000919) synthesizes the growing body of published findings related to the ability of cannabinoid lipids to activate some members of the TRP channel family. Additionally, the potent and diverse biological effects of cannabinoid lipids and their TRP channel targets on cutaneous sensory (i.e., pain and itch), homeostatic, and inflammatory processes are addressed.

Although this Review is not focused solely on the nervous system, the critical interplay between sensory neurons and other skin elements in both somatosensory function and inflammatory processes makes this topic one of great biomedical importance, and one that is likely to have implications for other sites, such as the brain, where neuronal and non-neuronal cell types interact physiologically and pathophysiologically.

Special Issue: TRPs as Probes and Medications for CNS Disorders

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