Researchers from University of Arizona School of Medicine Report Recent Findings in Proteomics

Report Summarizes Headache and Migraine Study Findings from University of Arizona School of Medicine

The scoop: Lineup changes stack up at Clear Channel radio (Arizona Cancer Center)

Tucson man burned over 70 percent of body (University of Arizona Medical Center)

Mesothelioma Treatment Becoming More Individualized (Dr. Linda Garland of the Arizona Cancer Center)

Pharmacists Demonstrate Value by Intercepting Med Errors in the ED (University of Arizona College of Pharmacy)

Firefighters: Exercise riskier than job (Gerald S. Poplin of the University of Arizona Mel and Enid Zuckerman College of Public Health)

Elite cyclists inspire Tucson kids with diabetes (Diamond Children's Medical Center)

Josh Brodesky: Transfusions 'all normal now' for brave Tucson teen (Dr. Andreas Theodorou, chief of pediatric critical care at Diamond Children's)

Dissecting the matter (Arizona Cancer Center)

Librarians list quality health Web sites (UA College of Medicine library in Phoenix)

Daily wheezing treatment no different from intermittent in toddlers

Free Health Care? Yes, Sir! (University of Arizona Medical School)
A new study, "IL-6- and NGF-induced rapid control of protein synthesis and nociceptive plasticity via convergent signaling to the eIF4F complex," is now available. According to the authors of a study from Tucson, Arizona, "Despite the emergence of translational control pathways as mediators of nociceptive sensitization, effector molecules and mechanisms responsible for modulating activity in these pathways in pain conditions are largely unknown. We demonstrate that two major algogens, the cytokine interleukin 6 (IL-6) and the neurotrophin nerve growth factor (NGF), which are intimately linked to nociceptive plasticity across preclinical models and human pain conditions, signal primarily through two distinct pathways to enhance translation in sensory neurons by converging onto the eukaryotic initiation factor (eIF) eIF4F complex."

"We directly demonstrate that the net result of IL-6 and NGF signaling is an enhancement of eIF4F complex formation and an induction of nascent protein synthesis in primary afferent neurons and their axons. Moreover, IL-6-and NGF-induced mechanical nociceptive plasticity is blocked by inhibitors of general and cap-dependent protein synthesis," wrote O.K. Melemedjian and colleagues, University of Arizona School of Medicine (see also ).

The researchers concluded: "These results establish IL-6-and NGF-mediated cap-dependent translation of local proteins as a new model for nociceptive plasticity."

Melemedjian and colleagues published the results of their research in the Journal of Neuroscience (IL-6- and NGF-induced rapid control of protein synthesis and nociceptive plasticity via convergent signaling to the eIF4F complex. Journal of Neuroscience, 2010;30(45):15113-23).

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threshold, an effect blocked by amiloride but not TRPV1 antagonists, suggesting that ASIC activation produces migraine-related behavior in vivo," wrote J. Yan and colleagues, University of Arizona School of Medicine.

The researchers concluded: "These data provide a cellular mechanism by which decreased pH in the meninges following ischemic or inflammatory events directly excites afferent pain-sensing neurons potentially contributing to migraine headache."

Yan and colleagues published their study in Pain (Dural afferents express acid-sensing ion channels: a role for decreased meningeal pH in migraine headache. Pain, 2011;152(1):106-13).

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