Vasoactive Intestinal Peptide (VIP) and Peptide Histidine Isoleucine (PHI) Knockout Mice

Tech ID: 20059 / UC Case 2001-173-0

BACKGROUND

VIP and PHI are expressed at high levels in the neurons of the suprachiasmatic nucleus, the area of the nervous system responsible for most circadian behavior, but their function in the regulation of circadian rhythms is unknown. In order to study the role of these peptides on the circadian system in vivo, a new mouse model was developed in which both VIP and PHI genes were disrupted by homologous recombination.

INNOVATION

In a light-dark cycle, the knockout mice were indistinguishable from control mice. However, in constant darkness, the VIP/PHI-deficient mice exhibited pronounced abnormalities in their circadian system. The VIP/PHI-deficient mice also exhibited deficits in the response of their circadian system to light. Researchers conclude that VIP/PHI peptides are critically involved in both the generation of circadian oscillations as well as the normal synchronization of these rhythms to light.

APPLICATIONS

- Research tool for the study of circadian rhythms
- Development of drugs that over come the phenotype observed in the VIP/PHI deficient mice

RELATED MATERIALS

- Disrupted circadian rhythms in VIP- and PHI-deficient mice. *Am J Physiol Regul Integr Comp Physiol.* (2003)

OTHER INFORMATION

To complete a **Ready-to-Sign Agreement** for this case, please view this document. [PDF]

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OTHER INFORMATION

KEYWORDS

research tools mouse models drug development

CATEGORIZED AS

- **Research Tools**
  - Animal Models

RELATED CASES

2001-173-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Pituitary Adenylyl Cyclase-activating Peptide (PACAP) Deficient Mice

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