

大学院特別講義のご案内

- ◆ 日時 : 2013年6月4日 (火) 17:00~19:00
- ◆ 場所 : 口腔科学研究棟5F 弓倉記念ホール
- ◆ 講師 : **Prof. Seog Bae OH**
School of Dentistry, Seoul National University
- ◆ 演題 : **Targeting Pain with Transient Receptor Potential Vanilloid Subtype 1 (TRPV1):
from Mechanisms to Therapeutics**
- ◆ 要旨 : TRPV1 in peripheral sensory terminals is a well-known molecular transducer of pain. In this presentation, I will discuss a critical role of spinal TRPV1 for pain information processing and a potential role of peripheral TRPV1 for producing pain-specific local anesthesia in the trigeminal system. Neuropathic pain and allodynia may arise from sensitization of central circuits. I will present a novel mechanism of disinhibition-based central sensitization resulting from long-term depression (LTD) of GABAergic interneurons as a consequence of TRPV1 activation in the spinal cord. Intrathecal administration of TRPV1 agonists led to mechanical allodynia that was not dependent on peripheral TRPV1 neurons. TRPV1 was functionally expressed in GABAergic spinal interneurons and activation of spinal TRPV1 resulted in LTD of excitatory inputs and a reduction of inhibitory signaling to spinothalamic tract (STT) projection neurons. Mechanical hypersensitivity after peripheral nerve injury was attenuated in TRPV1-/- mice but not in mice lacking TRPV1-expressing peripheral neurons. Mechanical pain was reversed by a spinally applied TRPV1 antagonist while avoiding the hyperthermic side effect of systemic treatment. Our results demonstrate that spinal TRPV1 plays a critical role as a synaptic regulator and suggest the utility of CNS-specific TRPV1 antagonists for treating neuropathic pain.

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