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# Scientists discover new category of analgesic drugs that may treat neuropathic pain

March 29 2017

New research published online in *The FASEB Journal* suggests that a novel therapeutic target called LPCAT2 may prove effective against pain that is not receptive to the current treatments. This study has also revealed the existence of a platelet alleviating factor (PAF) pain loop, suggesting a possible role for PAF-receptor antagonists.

"We hope this finding contributes to relief from neuropathic pain in all people," said Hideo Shindou, Ph.D., vice project leader at the Department of Lipid Signaling, National Center for Global Health and Medicine, in Tokyo, Japan. "We hope this candidate newly categorized analgesic drug will resolve human pain."

To make their discovery, Shindou and colleagues conducted experiments using two groups of mice. The first group (LPCAT2-KO mice) had a disrupted LPCAT2 gene, which normally encodes the synthesis of PAF. The other group consisted of normal mice. The researchers induced a partial sciatic ligation (PSL) model of neuropathic pain in both groups of mice. The PSL operation increased pain behaviors in WT mice, but not in LPCAT2-KO mice. These findings present a new concept of analgesic drug development for neuropathic pain through the inhibition of PAF biosynthetic enzyme, LPCAT2, and reevaluation of PAFR antagonists.

"The exciting thing about this discovery is that the results were unanticipated" said Thoru Pederson, Ph.D., Editor-in-Chief of *The FASEB Journal*. "One has the sense that a new door has been opened to the therapeutics of neuropathic pain."

**More information:** Hideo Shindou et al, Relief from neuropathic pain by blocking of the platelet-activating factor–pain loop, *The FASEB Journal* (2017). DOI: 10.1096/fj.201601183R