

GS03-2 **The involvement of free fatty acid signaling in chronic pain associated with emotional disorders**

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Chronic Pain has been recognized as “Disease” because of it was well defined in ICD-11 by the WHO. It has been regarded that chronic pain is complicated by some factor, including physical, psychological, and social. Especially, emotional disorders such as anxiety or depression, associated with persistent pain are caused pain chronicity. However, the mechanism of persistent pain associated with emotional disorders still unknown.

Recently, it is reported that the function of fatty acids (FA) and FA receptors show the beneficial effect against various disease including pain and psychiatry disorders. Our previously study has shown that activation of GPR40/FFAR1, one of the long chain-FA receptors, ameliorated stress induced-persistent pain. Furthermore, GPR40/FFAR1 knockout mice exacerbated stress induced-persistent pain. From these results, we proposed that disruption of free FA-GPR40/FFAR1 signal may induce stress induced-persistent pain. In this symposium, we would like to show the recent evidences regarding role of GPR40/FFAR1 in stress induced-pain chronicity, and the influence of n-3 FA deficiency on these pathological conditions.