Lectin-like oxidized low-density lipoprotein receptor-1 (LOX-1), a member of the scavenger receptor family, recognizes multiple ligands and participates in several inflammatory responses, but its function within the central nervous system (CNS) remains unclear.

In a study, Ge et al., discovered an increased LOX-1 expression in activated microglia in vivo and in vitro. Employing the specific inhibitors, they found that conditioned medium of necrotic neurons (Necrotic-CM) induced microglial LOX-1 expression through the MAPKs/NF-κB pathway. Silencing LOX-1 inhibited MAPK phosphorylation, NF-κB-p65 nuclear transportation, and pro-inflammatory factor production in microglia exposed to Necrotic-CM. Furthermore, utilizing the conditioned medium of activated microglia (MG-CM), we discovered microglial LOX-1 aggravated the neuroinflammation-induced neuronal apoptosis. Collectively, a LOX-1/MPAKs/NF-κB positive loop might promote microglia activation and drive the vicious cycle of neuroinflammation and neuronal injury [1)].

1)
Ge X, Zhang DM, Li MM, Zhang Y, Zhu XY, Zhou Y, Peng X, Shen AG. Microglial LOX-1/MAPKs/NF-κB positive loop promotes the vicious cycle of neuroinflammation and neural injury. Int Immunopharmacol. 2019 Feb 23;70:187-200. doi: 10.1016/j.intimp.2019.02.013. [Epub ahead of print] PubMed PMID: 30807932.