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Poster Sessions

The nuclear receptor REV-ERBs suppress the pro-inflammatory responses in cultured microglia

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The orphan nuclear receptor REV-ERBs exert as transcriptional regulatory factors, and have functions in the regulation of circadian rhythm, inflammation and metabolism. Microglia are crucial in inflammatory responses such as production of pro-inflammatory molecules in the CNS, and involved in the development of various neurodegenerative diseases. However, the role of microglial REV-ERBs in inflammatory responses has yet to be elucidated.

METHOD

Primary microglia were prepared from cerebral cortices of neonatal Wistar rats. Expression levels of mRNA or protein were examined by real-time PCR or western-blotting, respectively.

RESULT

Treatment of cultured microglia with specific REV-ERBs agonist SR9009 prevented the lipopolysaccharide (LPS)-induced mRNA expression of pro-inflammatory cytokines interleukin-1 β , interleukin-6 and tumor necrosis factor. Furthermore, treatment with SR9009 inhibited LPS-induced phosphorylation of p38 and p65 subunit of NF- κ B.

CONCLUSION

The current study suggests that REV-ERBs contribute to the regulation of expression of pro-inflammatory molecules through the inhibition of p38 and NF- κ B in cultured cortical microglia.