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The Pathological and Physiological Roles of IL-6 Amplifier Activation

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Abstarc :

The NF?B-triggered positive feedback loop for IL-6 signaling in type 1 collagen+ non-immune cells (IL-6 amplifier) was first discovered to be a synergistic signal that is activated following IL-17A and IL-6 stimulation in type 1 collagen+ non-immune cells. Subsequent disease models have shown that it can also be stimulated by the simultaneous activation of NF?B and STAT3, functions as a local chemokine inducer, and acts as a mechanism for local inflammation, particularly chronic ones like rheumatoid arthritis and a multiple sclerosis. Moreover, we have recently shown that hyper activation of the IL-6 amplifier via regional neural activation establishes a gateway for immune cells including autoreactive T cells to pass the blood-brain barrier at dorsal vessels in 5^{th} lumbar cord. Here we review how the IL-6 amplifier is activated by neural activation and the physiological relevance of the gateway to the central nervous system. Accumulating evidences continues to suggest that the IL-6 amplifier offers a potential molecular mechanism for the relationship between neural activation and the development of inflammatory diseases, which could establish a new interdisciplinary field that fuses neurology and immunology.

Key Word :
IL-6, neural activation, inflammatory diseases

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