**[3P]Somatosensation**
Fri. Jul 31, 2020 1:30 PM - 3:30 PM Poster Session
*Videos are available throughout the meeting period.*

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**[3P-081]Conditioned Medium from the Stem Cells of Human Exfoliated Deciduous Teeth Ameliorates Neuropathic Pain in mouse Partial Sciatic Nerve Ligation Models**

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The development of efficacious treatments for neuropathic pain (NP) has been stifled by the diversity and complexity of the disease's pathophysiology. Currently, there is no effective drug can treat neuropathic pain completely and definitively. Macrophage and microglia have been considered central players for NP because of their phagocytic function and their secretion of cytokines and chemokines. They are classified into M1 and M2 phenotypes, M1 produce typical proinflammatory cytokines and chemokines while M2 suppress the inflammation. The activation state of M1 and M2 are thought to represent the extreme activation states of them at each end of a continuum. It has been shown that the nerve injury-induced pro-inflammatory M1 circumstance induces NP. The therapy converting M1 toward anti-inflammatory M2 may cure NP.

In our present study, the therapeutic potential of conditioned medium derived from stem cells from human exfoliated deciduous teeth (SHED-CM) was investigated in a mouse model of NP induced by partial sciatic nerve ligation (PSL). Abnormal pain sensations such as tactile allodynia and hyperalgesia can be caused by PSL. In behavioral test data, there is significant difference between non-treatment group and SHED-CM treatment group, SHED-CM treatment greatly improved PSL-induced hypersensitivity. We found that the recruitment of M2 macrophages in injured sciatic nerve and ipsilateral side L4/L5 dorsal root ganglion. Furthermore, activations of spinal astrocytes and microglia were markedly suppressed in SHED-CM treatment showing that SHED-CM produced a powerful anti-nociceptive effect. Thus, SHED-CM may be a suitable therapeutic candidate for neuropathic pain.