Anesthesiology and Pain Medicine, Chonnam National University Medical School and Hospital, Gwangju, Korea

Background and Aims
Neuroinflammation is regarded as a leading cause of neuropathic pain. Mincle (macrophage-inducible C-type lectin), an innate immune receptor has shown to be involved in neuroinflammation in central nervous system. In contrast with toll-like receptor (TLR), much less is known about the role of C-type lectin or Mincle in initiation and maintenance of neuropathic pain. Spinal administration of Mincle ligand induced microglial activation and pain behavior of neuropathic pain in rat. This study evaluated the effects of Mincle antibodies in spinal nerve ligation (SNL) model and compared the binding site using epitope mapping.

Methods
With approval of IACUC, Male Sprague-Dawley rats underwent surgery for L5/L6 spinal nerve ligation (SNL) and intrathecal catheter implantation. Using von Frey test, anti-allodynic effect of three commercially available Mincle antibodies (Santa cruz, Invitrogen, Novus Biological) was examined after single intrathecal administration of antibodies. In addition, epitope mapping was performed to determine the antigen-binding site for each antibody. Interaction between Mincle antibody and TLR4 antagonist for reducing mechanical allodynia was also investigated using isobolographic analysis.

Results
Mincle antibodies significantly inhibited the mechanical allodynia and the strength of maximum inhibitory effects were in order of SantaCruz>Invtrogen>Novus Biological. All the antibodies bind to extracellular domain of Mincle with no overlapping epitope. In addition, synergistic anti-allodynic effect was shown by co-administration of Mincle antibody and TLR4 antagonist.

Conclusions
Blockade of Mincle by intrathecal antibodies has a strong anti-allodynic effect and produces a synergistic anti-allodynic effect with TLR4 antagonist in SNL model, suggesting Mincle as a potential target for therapeutic strategies for neuropathic pain.

### Abstract EP122 Figure 1
Flowchart of the GABA antagonist experiment

**A104**

**Reg Anesth Pain Med** 2023;48(Suppl 1):A1–A398 on October 18, 2023 by guest. Protected by copyright.