

## Group 2 innate lymphoid cells suppress pathology of neuromyelitis optica spectrum disorder

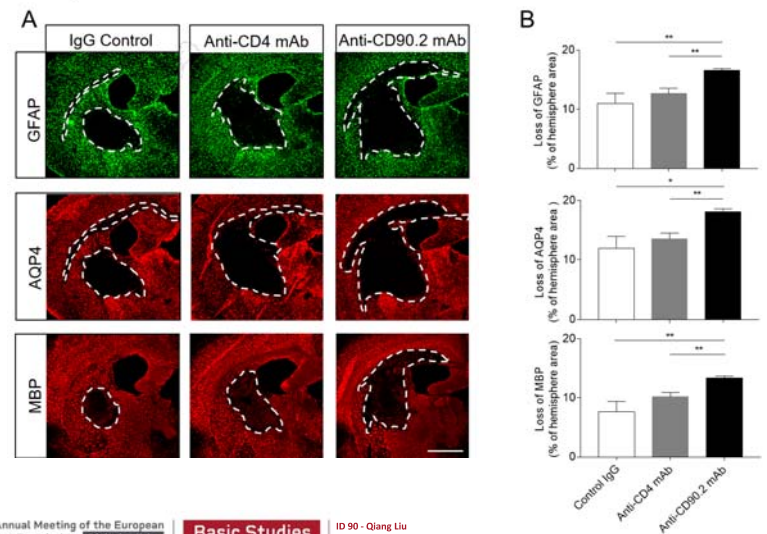
ID 90

Qiang Liu

Professor of Neurology  
Tianjin Medical University General Hospital  
Tianjin, China

28<sup>th</sup> Annual Meeting of the European Charcot Foundation Digital Edition The role of environmental factors in Multiple Sclerosis 15-19 NOVEMBER 2020

## Depletion of ILC2 exacerbates astrocyte loss and demyelination



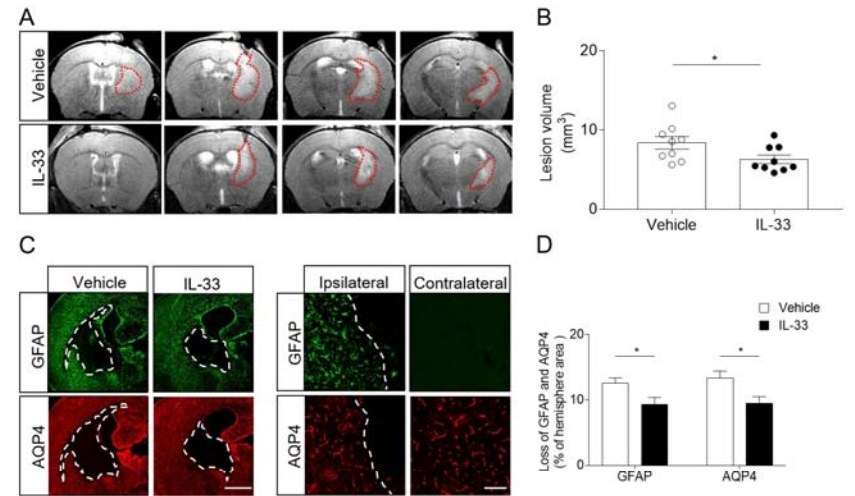
28<sup>th</sup> Annual Meeting of the European Charcot Foundation Digital Edition Basic Studies ID 90 - Qiang Liu China

## Background

- Neuromyelitis optica spectrum disorder (NMOSD) is a severe neurological autoimmune disease that mainly affects optic nerves and spinal cord
- Group 2 innate lymphoid cells (ILC2) are immune regulators that respond to the alarm signals, leading to initiation of type 2 immunity
- It remains unknown whether and how ILC2 participate in neurological autoimmune diseases such as NMOSD

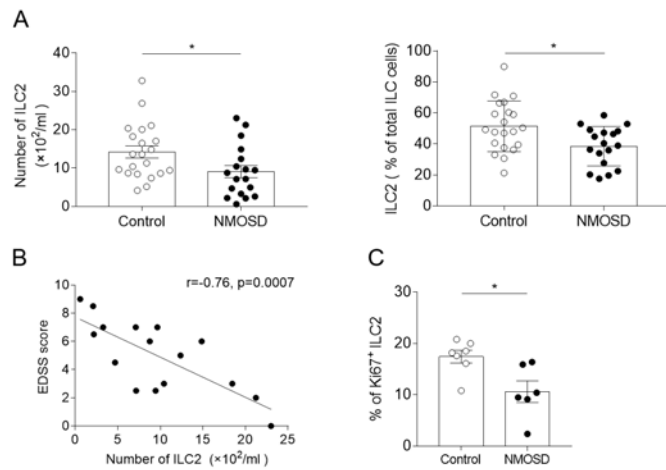
28<sup>th</sup> Annual Meeting of the European Charcot Foundation Digital Edition Basic Studies ID 90 - Qiang Liu China

## Expansion of ILC2 suppresses NMOSD pathology



28<sup>th</sup> Annual Meeting of the European Charcot Foundation Digital Edition Basic Studies ID 90 - Qiang Liu China

## Reduced number and activity of circulating ILC2 in NMOSD patients



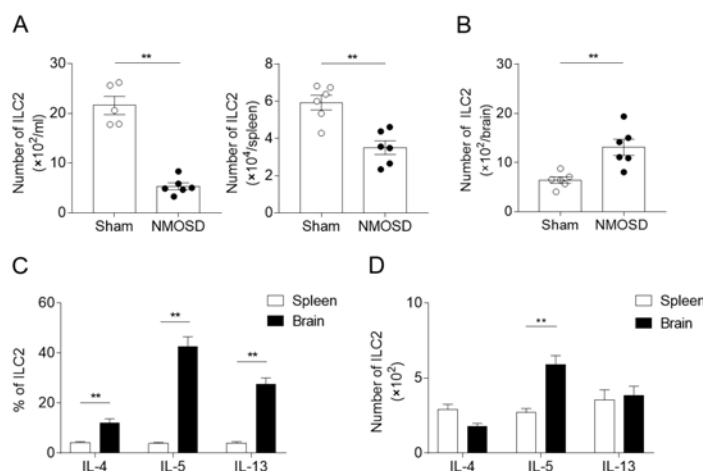
28<sup>th</sup> Annual Meeting of the European Charcot Foundation Digital Edition Basic Studies ID 90 - Qiang Liu China

## Summary

1. Reduced circulating ILC2 in patients with NMOSD and its mouse model
2. Upregulation of IL-5 in CNS-infiltrating ILC2 in NMOSD mice
3. ILC2 attenuates NMOSD pathology in mice

28<sup>th</sup> Annual Meeting of the European Charcot Foundation Digital Edition Basic Studies ID 90 - Qiang Liu China

## Number and activity of ILC2 in the periphery and CNS of NMOSD mice



28<sup>th</sup> Annual Meeting of the European Charcot Foundation Digital Edition Basic Studies ID 90 - Qiang Liu China

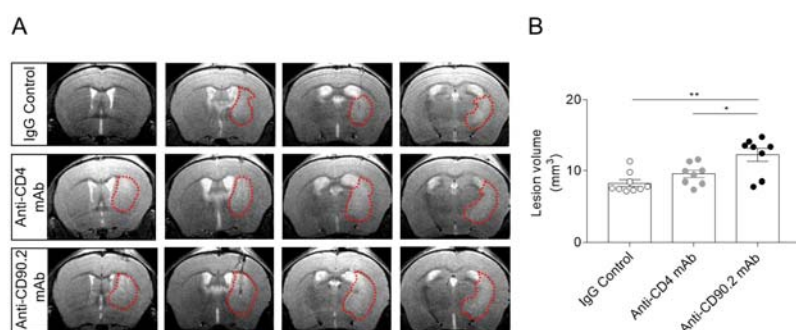
## Acknowledgements

➤ Tianjin Medical University General Hospital

Ying Kong, MD, PhD candidate  
Minshu Li, PhD  
Chunsheng Yang, MD, PhD  
Dan Wang, MD  
Xiaolin Gao, MD

28<sup>th</sup> Annual Meeting of the European Charcot Foundation Digital Edition Basic Studies ID 90 - Qiang Liu China

## Depletion of ILC2 enlarges NMOSD lesion volume



28<sup>th</sup> Annual Meeting of the European Charcot Foundation Digital Edition Basic Studies ID 90 - Qiang Liu China