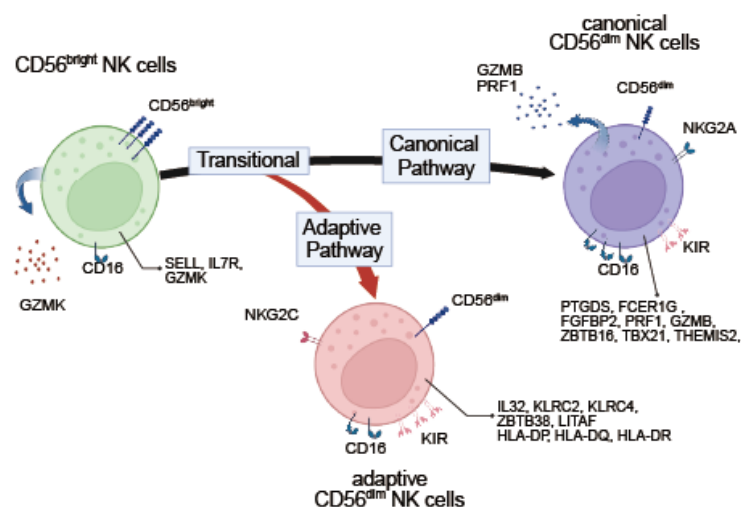


Mechanism of NK cell diversification during recovery from severe COVID-19

Natural Killer (NK) cells are immune cells that play a crucial role in the early defense against viral infections and cancer, yet how their diversity is established remains largely unknown.

A research group of Yosuke Kishi (MD Program, Osaka University School of Medicine), Shuhei Sakakibara (Visiting Associate Professor), and Daisuke Okuzaki (Associate Professor, IFRcC) analyzed natural killer (NK) cells in the blood of patients with severe COVID-19, as well as in individuals who received an mRNA vaccine, at the single-cell level. Their findings revealed the mechanisms through which NK cells diversify in response to the distinct immune stimuli of COVID-19 infection and vaccination.

The researchers found that during recovery from severe COVID-19, adaptive NK cells, which retain memory of past infections, increased in number. In contrast, after mRNA vaccination, the number of immature and proliferative NK cells increased, whereas adaptive NK cells were not induced.



Journal: *Scientific Reports* (2025)

Title: Mapping NK cell diversity in response to COVID-19 and mRNA vaccination

Authors: Yosuke Kishi, Yu-Chen Liu, Masakazu Ishikawa, Maika Yamashita, Hisatake Matsumoto, Hiroshi Ogura, Shuhei Sakakibara, and Daisuke Okuzaki

DOI : 10.1038/s41598-025-11575-w