



Prof. Ruth E. Ley

Managing Director,
Max Planck Institute for Biology

Silent recognition of flagellins from human gut commensal bacteria by Toll-like receptor 5

Flagellin, the protein unit of the bacterial flagellum, stimulates the innate immune receptor Toll-like receptor (TLR)5 following pattern recognition, or evades TLR5 through lack of recognition. This binary response fails to explain the weak agonism of flagellins from commensal bacteria, raising the question of how TLR5 response is tuned. I will describe a novel class of flagellin-TLR5 interaction, that we termed silent recognition. Silent flagellins are weak agonists despite high affinity binding to TLR5. This dynamic response is tuned by TLR5-flagellin interaction distal to the site of pattern recognition. Silent flagellins are produced primarily by the abundant gut bacteria *Lachnospiraceae*, many of which I will show share an evolutionary history with human populations. These findings provide a mechanism for the innate immune system to tolerate commensal-derived flagellins.

日時：2024年6月25日（火）10:00～11:00

場所：医学部百年記念館1階 大会議室

(ハイブリッド開催 <https://zoom.us/j/93475145997>)

共催：日本生化学会北海道支部

後援：共同利用・共同研究拠点「細菌やウイルスの持続性感染により発生する感染癌の先端的研究拠点」、2024年度（令和6年度）新たな学際領域を生み出す異分野融合研究拠点をコアにした若手研究者育成