高次脳機能学セミナー

Maternal Brain Mechanism Underlying Protective Aggression

子を守る母性脳の仕組み

Takashi Yamaguchi, Ph.D.

NYU Langone Health | Dayu Lin Lab

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Abstract

Female mammals undergo dramatic behavioral changes during pregnancy and lactation. They prioritize the care and well-being of their offspring over their own survival. Notably, lactating females display “maternal aggression,” an aggressive behavior in which they attack predatory intruders to protect their young. It has been proposed that circulating hormones during pregnancy and parturition remodel the brain circuit for the expression of this reproductive state–dependent aggression. However, the neural mechanisms of female aggression remain unclear. In this seminar, I will present recent findings on the neural plasticity and hormonal regulation underlying the temporal specificity of maternal aggression. I will also discuss how circulating hormones shape the “maternal brain circuit”.

哺乳類において、妊娠および出産を経たメスは劇的な行動の変化を示す。すなわち自己の生存より、産子の保護を優先して行う。とりわけ、産子を保護するために捕食者等の侵入者を攻撃する”母性攻撃行動”を授乳期特異的に示す。この生殖周期特異的なメスの攻撃行動の発現のために、妊娠期及び出産期における循環ホルモンが神経回路を可逆的に変化させると考えられてきたが、いまだ不明な点が多い。本セミナーでは、発表者が最近発見した母性攻撃行動回路の可塑性および、そのホルモン制御に関する話題を提供したい。そして循環ホルモンが如何に”母性脳”を形成するかを討論したい。

References: Yamaguchi et al., Nature (2026); Yamaguchi et al., Nat. Neurosci. (2020)

Contact: Takatoshi Hikida

The University of Osaka Institute for Protein Research Laboratory for Advanced Brain Functions

Email/Tel: hikida@protein.osaka-u.ac.jp / 06-6879-6100