

医学セミナー

" Functional and anatomical segregations within the central oxytocin system "

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グループリーダー



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時間: 15:30 ~ 16:30

場所: 4A411 室

筑波大学・ドイツ学術交流会(DAAD)
パートナーシッププログラム

Grinevich 博士は視床下部を中心にウイルスベクターによる回路標識や最新のオプトジェネティクスを用いて恐怖学習などを解析し、Neuron (2012) など主要ジャーナルに多くの論文を発表されています。今回、筑波大学とドイツ学術交流会とのプログラムに基づき来日されます。

要旨 : Oxytocin (OT), the neuropeptide of sociality and reproduction, is expressed in parvo- and magnocellular neurons localized in the hypothalamic paraventricular (PVN), supraoptic (SON) and accessory nuclei. The plethora of behavioral OT effects in distinct forebrain regions suggests their functional and anatomical segregation. Using retrograde tracing we could show that magnocellular OT neurons, which innervate different forebrain regions are (in most cases) situated distinct from each other. Furthermore, applying “virus-mediated genetic activity-induced tagging” (vGAIT), combined with optogenetics, we demonstrated that a small (~10%) fraction of magnocellular OT neurons, activated by fear learning, is sufficient to attenuate fear response. Similarly, the topographical and functional segregation occurs in parvocellular OT cells as viral-based tracing and optogenetics revealed a new subgroup of parvocellular OT cells in the PVN that synapses on magnocellular SON OT neurons and simultaneously projects to the several centers of the brainstem. The functionality of this new OT circuit is under investigation. In conclusion, our data provide evidence for high degree of specialization of parvo- and magnocellular OT neurons, opening the possibility for dissecting OT circuits specifically contributed to distinct forms of behaviors in a range from fear to empathy.

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