New perspective on brain function now possible

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A newly started research collaboration between Karolinska Institutet and AstraZeneca has already generated results. For the first time, the conditions have been created to study one of the brain's most important neurotransmission systems – the glutamate system – in living people.

Glutamate is one of the most common neurotransmitters in the human brain and is involved in virtually all brain functions. But even though researchers' PET cameras can produce images of other important neurotransmission systems, such as the dopamine and serotonin systems, until now it has not been possible to capture images of the glutamate system. This is because there has not been any suitable tracer that can bind specifically to the receptors in the glutamate system.

In collaboration with Karolinska Institutet, AstraZeneca has now developed such a tracer, which makes it possible for the first time to study the glutamate system in the brains of living people.

"The glutamate system is an area of keen interest for research, especially for gaining an understanding of neuropsychiatric disorders," says Professor Lars Farde at Karolinska Institutet and AstraZeneca. "All anti-psychotic medicines currently available on the market work via the dopamine system, for example. However, it may well turn out that glutamate receptors are even better drug targets."

Within the framework of this same collaboration, a state-of-the-art PET camera has been purchased for use in both academic research and

pharmaceutical development.

"The new PET camera will allow us to study the brain with a much higher richness of detail than previously," comments Professor Christer Halldin of Karolinska Institutet. "And thanks to the new tracer, we will be able to explore an entirely new neurotransmission system through high-resolution imaging."

Source: Karolinska Institutet