

SUMMARY

Title	Glycaemic control boosts glycosylated nanocarrier crossing the blood-brain barrier (BBB) into the brain
Investigator	Kazunori Kataoka Director General, Innovation Center of NanoMedicine, Professor, Policy Alternatives Research Institute, The University of Tokyo
Abstract	Recently, nanocarriers that transport bioactive substances to a target site in the body have attracted considerable attention and undergone a rapid progression in terms of the state of the art. However, few nanocarriers can enter the brain via a systemic route through the blood-brain barrier (BBB) to efficiently reach neurons. We prepare a self-assembled supramolecular nanocarrier with a surface featuring properly configured glucose. The BBB crossing and the brain accumulation of this nanocarrier are boosted by the rapid glycaemic increase after fasting and by the putative phenomenon of the highly expressed glucose transporter-1 (GLUT1) in brain capillary endothelial cells migrating from the luminal to the abluminal plasma membrane.
Applications	For transporting bioactive substances to targeted neurons of the brain via a systemic route through the BBB
Advantages	Few nanocarriers can enter the brain via a systemic route through the BBB to efficiently reach neurons.
Market Overview	TBD
Stage of Development	Basic Research
Patent Information Publication	<ul style="list-style-type: none">• JP 6086566 B2• WO2015/075942• Nature Communications 8, Article number: 1001 (2017) doi:10.1038/s41467-017-00952-3
Business Opportunity	Looking for licensees of this new nanocarrier technology platform

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