



BrainTransporter

To further improve the outcome of treatments against diseases of the brain, BioArctic has developed its BrainTransporter technology. In preclinical trials, the method has been shown to yield up to 70 times the concentration of antibodies in the brain compared to antibodies unaided by a carrier protein – a result that, if it holds up in clinical trials, will open up new possibilities for treatment of diseases of the brain. This technology is being used in BioArctic's own drug projects, and is also licensed externally through partnerships and collaborations.





The BrainTransporter has the potential to both enhance efficacy and reduce side effects

BioArctic has developed the BrainTransporter technology to solve a problem that has long challenged drug developers in the field of brain – delivering sufficiently high concentrations of drugs into the brain. After presenting strong preclinical results, BioArctic has signed agreements for its technology with three global pharmaceutical companies, and the prospects for more agreements are very good.

The brain is the most complex organ in the human body, and it is estimated that around 600 diseases affect the brain. Many of these cannot be treated effectively, largely because of the difficulties in delivering drugs into the brain. The blood-brain barrier exists as a natural defense against the entry of foreign substances, which means that drug molecules such as antibodies – and other drugs – are blocked. BioArctic's BrainTransporter has the potential to solve this challenge by utilizing the body's own systems for the active transport of substances across the blood-brain barrier and into the brain.

From passive to active transport

Far less than 1 percent of the antibodies that are administered via the blood during intravenous treatment enter the brain. The drugs that currently pass into the brain do so via passive



Four platform categories



BrainTransporter is now being developed in four different categories:

BT^A: linked to antibodies

BT^E: linked to enzymes

BT^S: linked to small modalities

BT^O: linked to drug candidates in oncology



transport, primarily through diffusion together with spinal fluid. As a result, the drugs are dispersed unevenly throughout the brain, with larger accumulations throughout the ventricular system, which are the spaces where the spinal fluid is located. As a consequence, large parts of the brain are not fully exposed, and the total amount of drugs that reaches the brain is also limited.

BioArctic's BrainTransporter technology enables different type of drugs – instead of diffusing – to be actively transported into the brain. This technology uses the transferrin receptor, a protein that normally transports iron across the blood-brain barrier. The transferrin receptor is also used by other companies, but the method has long been associated with certain challenges. For example, the transferrin receptor can affect the rest of the body, which could result in serious side effects such as anemia, where the formation of new blood can be impacted. Other challenges include immune reactions triggered by the binding of antibodies transported via the transferrin receptor in the bloodstream, causing the antibodies to become visible to the immune system. The effectiveness of the antibodies can thereby also be negatively impacted.

Unique design solves previous challenges

BioArctic's version of its BrainTransporter technology is designed to solve these challenges. The technology itself consists of a molecule, BAT007, which binds to the transferrin receptor. All antibodies, enzymes or other drug candidates that are linked to BAT007 are thus actively transported into the brain via the transferrin receptor.

What distinguishes BAT007 from other technologies is where it binds on the transferrin receptor and how it positions itself. This unique binding leads to two positive effects: first, the key natural ligands for the transferrin receptor in the body are not disrupted; and second, the antibodies that are linked with BAT007 are not visible to the immune system.

The hope is that the unique design of BioArctic's BrainTransporter will solve the problems that other

The BrainTransporter technology yields up to

70 times

greater exposure of antibodies in the brain, and the antibodies are also distributed more rapidly and evenly throughout the brain.

technologies have, with potential anemia or undesirable immunological reactions as a consequence.

70 times greater exposure

BioArctic's research findings from advanced preclinical models show that the BrainTransporter technology yields up to 70 times greater exposure to antibodies in the brain, and that the antibodies are also distributed more rapidly and evenly throughout the brain. No signs of abnormal blood formation or impact on the formation of blood cells were initially seen in the preclinical models.

Many clinical advantages

If the promising preclinical findings can be replicated in clinical experiments, the technology has significant potential since it facilitates the development of antibodies with entirely different properties than current treatments. The drastically increased concentration and more even distribution of the antibody in the brain could result in both faster and stronger efficacy from an antibody drug. Antibodies could likely also be administered in significantly lower doses, which reduces the volume and opens up possibilities for more user-friendly administration methods. There is also reason to believe that the even distribution of the antibodies in the brain will lead to fewer serious side effects.

BioArctic owns the rights to its BrainTransporter technology



BioArctic has all rights for the use of its BrainTransporter technology outside the scope of the agreements it has entered into. BrainTransporter could be used in a number of different therapeutic areas for active transport of biological molecules, which opens up many potential future collaborations and partnerships.

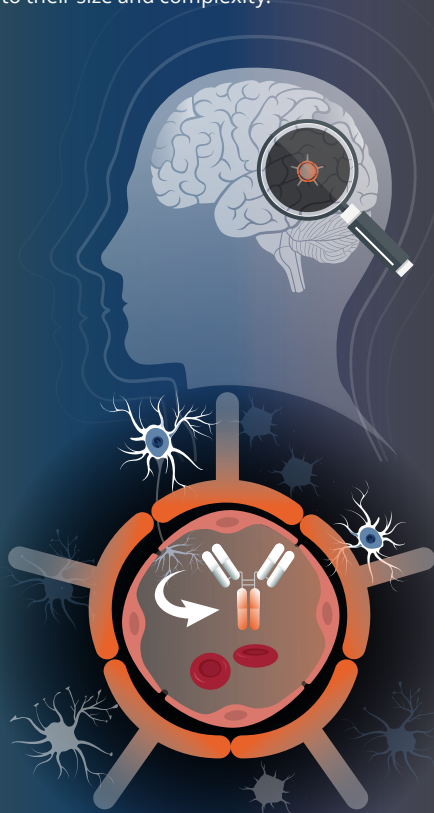




Active transport of drugs into the brain

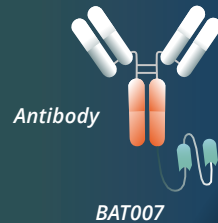
The challenge

The blood-brain barrier is a 600-kilometer long network that provides energy to and protects the brain. At the same time, the barrier makes the transport of drugs to the brain more difficult. Transporting antibody drugs is especially challenging due to their size and complexity.

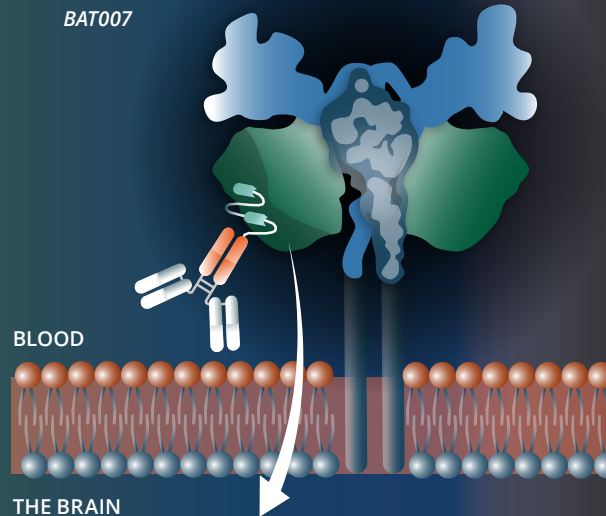


BioArctic's solution

The BrainTransporter technology connects, for example, antibodies or enzymes with the BAT007 molecule so that they are transported with the aid of the transferrin receptor, which normally transports iron across the blood-brain barrier.



BAT007 has a unique design that allows the antibody to bind to the transferrin receptor without becoming visible to the immune system and without disrupting the natural ligands to the transferrin receptor.

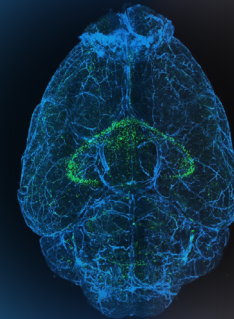


The unique binding has the potential to reduce the problem that other technologies have with undesirable immunological reactions or potential anemia.

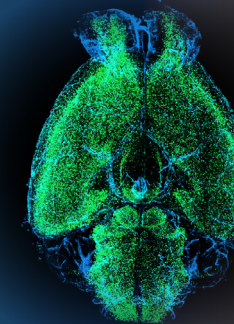
Findings

Preliminary research findings show that the technology yields up to 70 times greater exposure of antibodies in the brain, and the antibodies are also distributed more rapidly and evenly throughout the brain.

Images of mouse brains 72 hours after dosing. The antibodies are tinted green.



Antibody without BrainTransporter



Antibody with BrainTransporter



“The field of brain cancer is highly interesting”

Interview with Per-Ola Freskgård, Chief Scientific Officer at BioArctic

What were the key advances for the BrainTransporter technology in 2025?

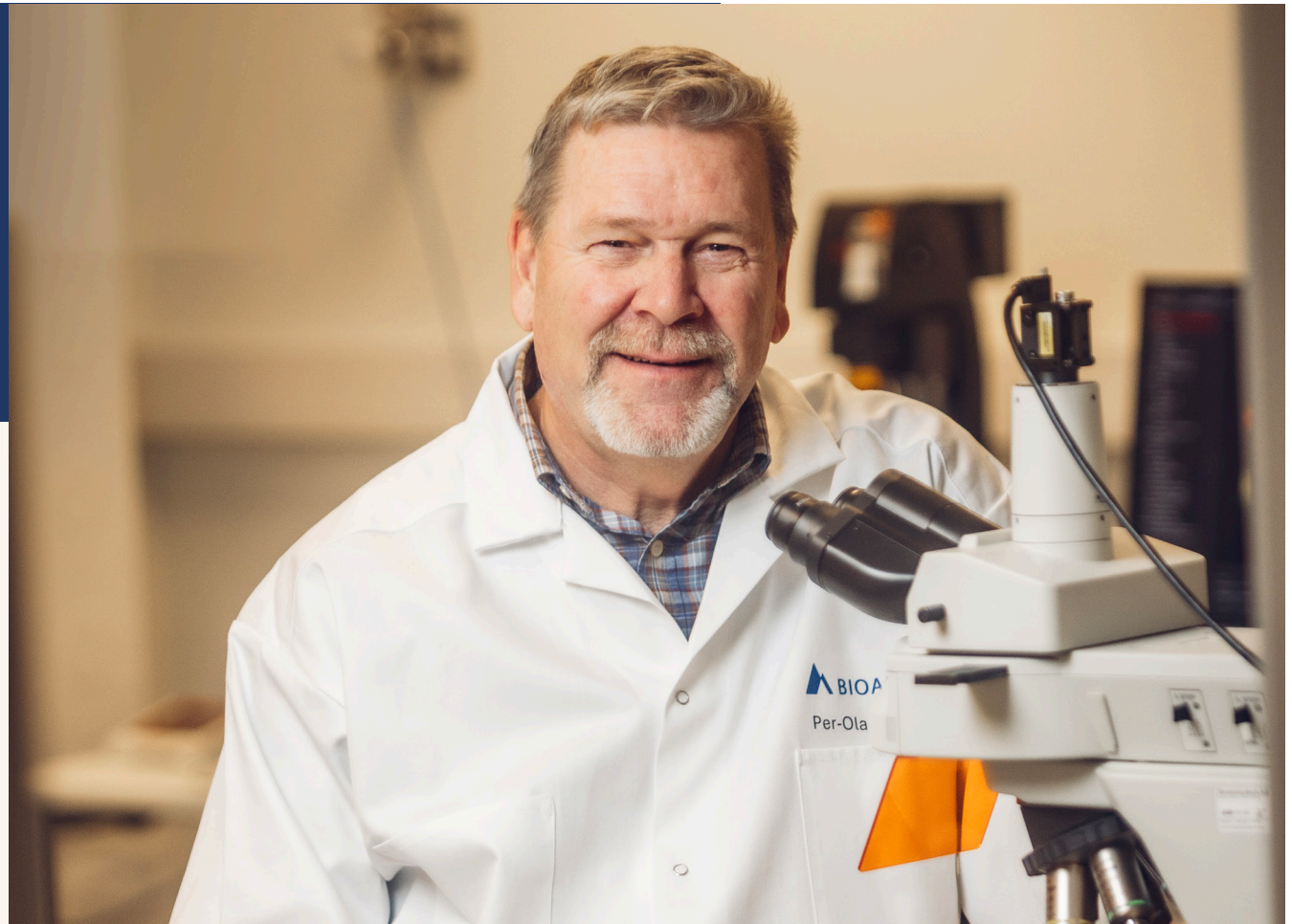
“The platform has become fully established internally here at BioArctic and is a natural part of our research projects, especially for our antibody projects. Adding new patents during the year that provide efficient protection for the technology has been a reassurance. During the year, we also further developed the platform to be able to apply the BrainTransporter technology to other modalities, such as enzymes, antisense oligonucleotides and siRNA. This allows the development of drugs that interact with new target molecules in the brain, especially those previously considered inaccessible by traditional drugs. In the long run, we hope that this will lead to diseases that are currently considered impossible to treat becoming treatable.”

Which indications, beyond neurodegeneration, are of greatest interest?

“We are already active in lysosomal diseases, with our drug candidate for Gaucher disease. There are several lysosomal diseases that could be relevant because it is the

blood-brain barrier in particular that makes them impossible to treat effectively today. We are also seeing an interest in neuroinflammation, where there are target molecules that could become accessible owing to our BrainTransporter technology. The field of brain cancer is a highly interesting one. There are

several cancer drugs that function effectively in the body, but not inside the brain, because the drug is blocked by the blood-brain barrier. There is clear potential for the BrainTransporter technology there.”





Three agreements that show the way

Eisai

In April 2024, BioArctic entered into a research evaluation agreement with Eisai for BAN2802, a potential new treatment that combines BioArctic's BrainTransporter technology with a drug candidate against Alzheimer's disease. This was the first agreement that included BrainTransporter and builds on the companies' long-standing collaboration since 2005, which resulted in Leqembi.

Agreement structure

BioArctic and Eisai share the costs of the research evaluation program. After the evaluation is concluded, Eisai will decide whether the company wishes to exercise its option to license BAN2802 for treatment of Alzheimer's disease. If they choose to do so, Eisai is expected to assume responsibility for development and commercialization.

Bristol Myers Squibb

In December 2024, BioArctic entered into a globally exclusive license agreement with Bristol Myers Squibb for BioArctic's pyroglutamate amyloid-beta (PyroGlu-A β) antibody program for the treatment of Alzheimer's disease. The agreement encompasses BAN1503 and BAN2803, with the latter being combined with BioArctic's BrainTransporter technology.

Agreement structure

Bristol Myers Squibb assumes full responsibility for the development and potential subsequent commercialization of BAN1503 and BAN2803 worldwide. BioArctic retains an option to commercialize the products in the Nordic region alongside Bristol Myers Squibb.

Economic terms and conditions:

- Initial payment: USD 100 million
- Potential milestone payments (developmental, regulatory and commercial): up to further USD 1.25 billion
- Royalties on global sales: gradually increasing, low double-digit percentages

Novartis

In August 2025, BioArctic signed a collaboration and license agreement, with options, with Novartis Pharma AG for the development of a new drug candidate for the treatment of neurodegeneration. The agreement combines BioArctic's BrainTransporter technology with an antibody developed by Novartis.

Agreement structure

BioArctic is responsible for creating the drug candidate by connecting the BrainTransporter technology to the Novartis antibody. After evaluating the generated drug candidate, Novartis will decide whether to exercise its option. If so, Novartis assumes full responsibility for global development and commercialization.

Economic terms and conditions:

- Initial payment for research collaboration: USD 30 million
- Potential milestone payments upon exercise of option: up to USD 772 million
- Royalties on global sales: gradually increasing, medium-high single-digit percentage



"There were several different factors that made BioArctic appealing"

Interview with Kenneth J. Rhodes, Ph.D. Vice President, Neuroscience TRC Bristol Myers Squibb

In addition to the company's BrainTransporter technology and an innovative high-affinity antibody against amyloid-beta, it was BioArctic's expertise in neurodegenerative diseases, its strong commitment to patients and its willingness to collaborate that ultimately made the difference when the global partnership with BMS was signed in December 2024.

What makes the BrainTransporter platform interesting?

"We are very excited about the BrainTransporter program and its ability to deliver greater concentrations of therapeutic antibodies to the brain. This potentially allows us to use lower doses, and a more convenient dosing regimen, to achieve dramatic results for patients. We are also excited that the BrainTransporter approach delivers antibodies to the brain via the capillary network. This may be particularly important in Alzheimer's disease because it allows an antibody targeting amyloid to reach its target in the brain while minimizing the risk of inflammation in the larger cerebral blood vessels, thereby avoiding one of the safety concerns associated with current amyloid-targeting antibody therapies."

What attracted Bristol Myers Squibb to choose BioArctic as a partner?

"We were attracted to BioArctic as a partner because of their deep expertise in neurodegenerative diseases, their commitment to improving patient care, their scientific rigor, collaborative spirit and the great working

relationship we built throughout the diligence process.

For the BAN2803 program specifically, we found the combination of the innovative BrainTransporter technology, paired with a high-affinity antibody targeting a clinically validated epitope on Aβeta, to be very compelling. We were also attracted to the strong preclinical data package that the BioArctic team developed and their willingness to work collaboratively with BMS to ensure a smooth path to the clinic."

In what way can technologies like BrainTransporter complement Bristol Myers Squibb's broader neuroscience strategy?

"Our teams are working to advance therapies across the continuum of care, bringing solutions that not only modify disease biology but also enhance patient experience and quality of life from early intervention through later stages of disease. We feel that the BioArctic BrainTransporter technology may have potential applicability across a number of diseases and potentially a variety of therapeutic modalities, providing improved delivery of next generation therapies to patients with neurodegenerative diseases."



What concrete benefits do you see this approach bringing to patients and caregivers living with Alzheimer's disease?

"Our hope is that the BrainTransporter approach will deliver an anti-amyloid therapy with an improved benefit-risk profile, a lower volume of administration, and less frequent dosing. All of these features will improve the patient experience, and together may allow us to use these therapies much earlier in the course of disease, providing greater patient benefit."