VECT-HORUS
BREAKING BARRIERS

PRESS RELEASE

Neurotensin, vectorised by Vect-Horus, is the first drug-candidate in neuroprotective hypothermia

VECT-HORUS starts the regulatory preclinical development of VH-N439, positioned as a first-in-class neuroprotective agent in brain ischemia

Marseille March 19, 2015 - VECT-HORUS is a biotechnology company that designs and develops peptide-vectors to facilitate the delivery of drugs or imaging agents, notably in the brain. Today, VECT-HORUS announced the start of regulatory preclinical development of its candidate VH-N439, a conjugated form of neurotensin for therapeutic hypothermia.

Neurotensin is a neuropeptide with global hypothermic potential when administered directly into the brain, but unable to cross the blood-brain barrier (BBB) when administrated alone systemically. The Company has developed VH-N439, a new chemical entity based on the conjugation of one of its peptide-vectors to an analogue of neurotensin.

Using *in vivo* models, the company has already shown improved potent hypothermia effects of VH-N439 compared to those obtained with free neurotensin. Interestingly, when it is administered by intravenous perfusion, VH-N439 induced a hypothermic effect that was maintained for several hours. This long-duration effect is of great interest since a long-term hypothermia is essential to treat patients following cardiac arrest or neonatal hypoxia/ischemia. Effects on neuroprotection in animals correlated well with hypothermia induction.

"*We are greatly encouraged by this proof of concept in animals*" stated Dr. Jamal Temsamani, Director of Drug Development of VECT-HORUS "*This is an important milestone in taking VH-N439 through the regulatory approval process. In light of the promising hypothermia results, we intend to demonstrate the safety and tolerability of VH-N439 during the regulatory preclinical phase and start Phase 1 clinical trials early 2016*".

Alexandre Tokay, CEO, added: "*VH-N439 could be positioned as a first-in-class neuroprotective agent following sudden cardiac arrest and neonatal hypoxia/ischemia. We believe that VH-N439 could represent a better alternative to existing physical approaches and medical devices. We welcome the opportunity of new partnerships to extend this wonderful project with studies in humans".*

About Therapeutic hypothermia

Therapeutic hypothermia is warranted in many pathological situations: resuscitation after cardiac arrest (or before surgical procedures that involve stopping the heart), severe traumatic brain injury, cerebral ischemia, neonatal hypoxia/ischemia, etc. By slowing metabolism and preventing cell damage, hypothermia is now considered one of the most promising neuroprotective approach following acute brain damages.

Despite the great clinical importance of therapeutic hypothermia, only physical approaches and medical devices are currently used to reduce body temperature (e.g., infusion of cold fluids, cooling blankets or helmets, etc.). Unfortunately, these approaches have many caveats: 1) they are difficult to implement 2) they may have delayed onset of action and/or transient effect and 3) they may induce undesirable side effects such as shivering or mild fluid buildup in the lungs requiring the administration of additional treatments.

Medical indications related to therapeutic hypothermia, such as sudden cardiac arrest, are worth about 3 Bn$, essentially based on medical devices. The market for stroke is 12 Bn$, and while 20% of stroke patients already undergo therapeutic hypothermia, large scale clinical studies are still ongoing to determine the full potential of this approach.

About VECT-HORUS

VECT-HORUS is a French biotechnology company that designs and develops peptide-vectors to facilitate the delivery of drugs or imaging agents toward the brain and other organs. By combining pharmaceutical agents to peptide vectors, VECT-HORUS enables their transport across the BBB that significantly impedes brain delivery of most drugs.

From this perspective, VECT-HORUS has identified and validated highly specific and stable vectors protected by several families of patents and patent applications.

The company has already demonstrated proof of concept of the technology in animal models by vectorizing different molecules, among them the endogenous neuropeptide neurotensin, which is currently in regulatory preclinical studies. The technology has also enabled the signing of a scientific collaboration agreement with SANOFI in the field of neurodegenerative diseases.

Founded in 2005, VECT-HORUS is a spin-off from the CNRS-AMU NICN laboratory directed by Dr. Michel Khrestchatisky. Its founders are Alexandre Tokay, Chairman, and Michel Khrestchatisky, Scientific Counsel. VECT-HORUS has 17 employees, mostly in R&D.

VECT-HORUS is identified by the CNRS as one of the 15 success stories among 1,000 spinoffs from its laboratories.

More about VECT-HORUS at www.vect-horus.com

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