

Navigo Proteins and MDimune Enter into a Research Collaboration on Affilin®-Mediated Targeting of Extracellular Vesicles

Solid tumor-specific scaffold protein ligands from Navigo combined with MDimune's BioDrone® technology to create novel targeted extracellular vesicle-based therapeutics

Halle/Saale, Germany and Seoul, Korea, May 11th, 2021. Navigo Proteins, a protein engineering biotech company generating scaffold protein-based affinity ligands, and MDimune, a biotech company developing an innovative drug delivery platform based on exosome-like, nanosized cell-derived vesicles (CDVs), today announced a technology collaboration to achieve tissue-targeting of extracellular vesicles (EVs). The ongoing research combines Navigo's target-binding Affilin® molecules with MDimune's CDV technology, to enable Affilin®-mediated delivery of CDVs specifically to solid tumor targets.

For the current collaboration, Navigo Proteins will contribute its existing solid tumor-specific Affilin® molecules to 'decorate' the surface of the exosome-like CDVs from MDimune's BioDrone® technology, thereby pioneering next-generation, targeted extracellular vesicle-based therapeutics (See Figure 1).

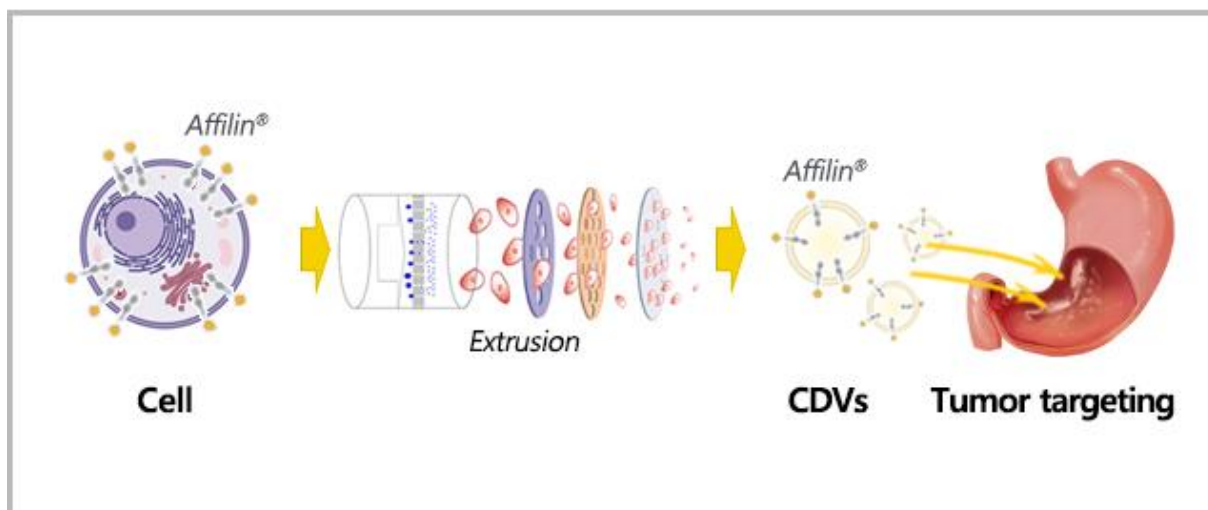


Figure 1: Affilin®-mediated tumor targeting of CDVs

Dr. Ulrich Haupts, Chief Scientific Officer of Navigo Proteins commented: “We are looking forward to combining our selectivity-conferring Affilin® molecules with MDimune’s extracellular vesicles manufacturing platform, since this opens up an exciting new application for our scaffold protein-based Affilin® molecules in the upcoming field of exosome-based therapeutics. The modular and highly engineerable Affilin® technology can be a very attractive solution for the precise, targeted delivery of exosome-like vesicles, carrying different payloads to different target tissues.

“Recently, we have invested significant efforts and resources to expedite effective steering of our vesicles, CDVs, to tumors or other resistant tissues. The current collaboration with Navigo Proteins is one of them highlighting our recent focus. Navigo Protein’s demonstrated expertise in generating highly tissue-specific ligands will be key to enable this goal and ultimately build a foundation for our BioDrone® platform technology,” said Dr. Seung Wook Oh, Chief Scientific Officer of MDimune.

Affilin® Affinity Ligands

Navigo's Affilin® molecules are target-specific, small, stable, highly engineerable, single-chain affinity ligands and are based on human Ubiquitin as a protein scaffold. Since Ubiquitin is an evolutionarily conserved natural human protein, also present in plasma, Affilin® molecules have low immunogenic potential in humans and can also be directly used in various pre-clinical animal models.

Affilin® molecules are currently being developed as antibody-alternatives in protein-drug conjugates, radio conjugates, CAR-T cell therapy, and as bi/multi-specific molecules by combining them with antibodies. With this collaboration, Navigo aims to extend the applicability of Affilin® molecules to direct exosomes and extracellular vesicles to the target tissues of interest.

BioDrone® Platform Technology

MDimune's BioDrone® platform facilitates the production of CDVs, exosome-like, nanosized vesicles, in large quantities from various cell types by a proprietary extrusion method. CDVs are similar to exosomes in size, properties, and functions, but exhibit substantial advantages in yield that is more suitable for large-scale production and versatility to allow highly sophisticated engineering, starting from virtually any cell type. BioDrone® technology is emerging as a highly versatile and scalable delivery system to address many human diseases, including cancer, neurodegeneration, and more.

While the current project is aimed at Affilin®-CDV-mediated payload delivery to solid tumors, this technological advance will not only be limited to cancer but could be expanded to other tissues and diseases.

About Navigo Proteins GmbH

Navigo Proteins is a premier protein engineering company developing affinity ligands, based on its proprietary platform of selected, small, and stable, yet highly engineerable scaffold proteins. These ligands serve as target-binding proteins in biotherapeutic molecules (PRECISION TARGETING) or for commercial custom affinity purification of biologics (PRECISION CAPTURING®).

Navigo's PRECISION TARGETING unit creates proprietary Affilin® molecules based on the human Ubiquitin scaffold – a highly conserved, small (8.5kDa) and stable natural human protein. A major strength of the Precision Targeting toolbox is its modular engineerability. The target-specific Affilin® molecules can be combined with a variety of carrier units for site-specific payload coupling as well as half-life extension moieties and function-conferring effector modules to convert them into different biopharmaceutical modalities. Navigo's ligands are currently being developed as Affilin®-drug conjugates, Affilin®-radio conjugates, Affilin® CAR-T cell therapy and can also be fused to antibodies to create robustly-to-produce bi-/multi-specific molecules (Mabfilin™/Fabfilin™).

For more information visit <https://www.navigo-proteins.com/> and follow Navigo Proteins on [LinkedIn](#).

About MDimune Inc.

MDimune, a South Korean biotech founded in 2015, has been committed to the development and implementation of state-of-the-art BioDrone® platform technology. BioDrone® is an innovative technology that relies on human-sourced CDVs, nanosized vesicles obtained from various cells by using a proprietary extrusion method to achieve target-specific drug delivery. With superior productivity compared to exosomes, BioDrone® is emerging as a highly versatile and scalable delivery system to combat diverse debilitating human diseases, including cancer, neurodegeneration, and rare diseases.

MDimune is expanding its global network to harness effective tissue targeting strategies to achieve highly tissue-specific delivery of various cargos such as miRNA, siRNA, mRNA, and proteins. The company envisions applying this novel BioDrone® platform to address various needs of pharmaceutical clients who are looking for effective drug carriers.

For more information visit <http://www.mdimune.com/en/>.

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