

MDimune announced the development of the GMP manufacturing process for cell-derived vesicles in the latest publication

SEONGDONG-GU, SEOUL, SOUTH KOREA, January 5, 2023 /EINPresswire.com/ -- MDimune Inc., a Korean biotech company developing BioDrone™ platform technology based on cell-derived vesicles (CDVs), announced the publication of data in the Journal of Extracellular Biology showing the development of the Good Manufacturing Practice (GMP)-compliant manufacturing process of CDVs and their biological activities.

CDVs are nanosized vesicles, similar to extracellular vesicles (EVs), produced from diverse human cells by using a proprietary extrusion method. In the publication entitled "GMP-compliant manufacturing of biologically active cell-derived vesicles produced by extrusion technology," the company showed that its extrusion method can produce nanovesicles with highly similar physical, biochemical, and functional properties to EVs, but at 10-100 times higher yield than natural EVs. This demonstrates its distinct advantage in producing nanovesicles at scale.

The current work not only escalated the scale of the extrusion process but also proved that CDVs can be manufactured in a GMP-compliant environment. By using umbilical cord mesenchymal stem cells (UCMSCs), more than ten thousand nanovesicles can be obtained per single cell, which far exceeds the productivity of naturally secreted EVs. Moreover, UCMSC-derived CDVs exhibited strong immunomodulatory potentials, such as inhibition of T-cell proliferation and elevated activity of CD73 which is known for its anti-inflammatory effect, indicating that UCMSC-CDVs can be used to treat many inflammatory diseases.

Previously, MDimune showed the therapeutic effect of MSC-CDVs in various disease models, such as emphysema, spinal cord injury, stroke, cardiac damage, inflammatory bowel disease, etc. With these pre-clinical findings and manufacturability tested in a GMP setting, MDimune is on track to move its well-characterized MSC-CDVs forward for clinical studies in the coming year.

"We are delighted to publish this work of more than two years of successful collaboration," said Seung Wook Oh, Chief Scientific Officer at MDimune. "By establishing a GMP-compliant manufacturing process at high yield, we are getting closer to testing our products in clinical settings and eventually for commercialization."

Currently, MDimune is expanding industry partnerships with those companies who wish to utilize the BioDrone™ platform for next-generation cell therapies or targeted payload delivery.

MDimune, Inc. <http://www.mdimmune.com/>, <https://biodroneus.com/>
BioDrone™ Platform Technology: <https://youtu.be/lwwDQOpyKs4>

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