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ASIA EDITION

Japan designs world's first immuno-chromatography kit for extracellular vesicles

July 11, 2023 | News

Dai Nippon Toryo and Shimadzu intend to continue developing new immuno-chromatography reagent kits



Japan-based Shimadzu Corporation has collaborated in developing Exorapid-qIC, an immuno-chromatography kit for extracellular vesicles (CD9), launched for advanced domestic sales by Dai Nippon Toryo Co.

Exorapid-qIC is the world's first immuno-chromatography reagent kit that targets exosomes, which are a type of extracellular vesicle (EV). Exorapid-qIC comes with "gold nanoplate-labeled antibodies," which are antibodies bound to gold nanoplates made by Dai Nippon Toryo, "immuno-chromatography test paper" that traps exosomes when wetted with a sample solution, and a "rinse solution" used to rinse the test paper.

Shimadzu Corporation is mainly responsible for choosing which type of EVs are detected by Exorapid-qIC and for optimisation and assessment of the exosome detection system.

Using immuno-chromatographic reagents for analysis reduces initial costs associated with test equipment and reduces testing times to 45 minutes, just one-fifth the time required for previous methods.

Exosomes carry a range of information from their parental cell and are being studied for their potential utility in diagnostic applications. For example, exosomes released by cancer cells (malignant tumors) could be used for early cancer diagnosis. Diagnosing cancer based on exosomes would be less invasive than a conventional tissue biopsy and cheaper than MRI or other diagnostic imaging methods. Exosomes have also been attracting interest for their therapeutic potential. Reports have shown that exosomes released by mesenchymal stem cells (MSCs), which are used in regenerative medicine, have the ability to cure diseases and heal wounds, and clinical studies of exosomes are already underway outside of Japan.