Fluorescent Labelling of membranes and analysis by Malvern-Panalytical Fluo-NTA

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As researchers push to gain further insight into extracellular vesicles (EVs), the fundamental need to understand the purity of the sample remains. Depending on the EV isolation technique, the presence of co-purifying proteins in EV samples can be a concern when measuring EV concentration. Protein aggregates that scatter light can be misidentified as vesicles when using Nanoparticle Tracking Analysis (NTA). Addressing this issue is particularly important when studying EV heterogeneity and distinct EV subpopulations.

To overcome this problem, we labelled EVs in mixed samples with CellMaskTMOrange® Plasma membrane dye and characterized EVs using NanoSight NTA ("Nanoparticle Tracking Analysis") in fluorescence mode (F-NTA). EV labelling with this dye is quick, easy and efficient, and not affected by presence of co-isolated proteins. F-NTA can be a powerful tool in confirmation of the presence of pure EVs, and subpopulations in fractionated samples.