evGAG: Fast Extracellular Vesicle purification for biomarker discovery

evGAG
Extracellular vesicles Purification Kit

evGAG is a patented purification method that allows isolation of extracellular vesicles (EVs) from biofluids. The evGAG precipitation reaction is based on the interaction between the precipation solution and glycosaminoglycans (GAGs) in the EVs.

Applications

- Ideal for Isolation of extracellular vesicles (EVs) from urine samples
- Nanoparticle Tracking Analysis (NTA)
- Flow Cytometry Analysis (FACS)
- Western Blot (WB)

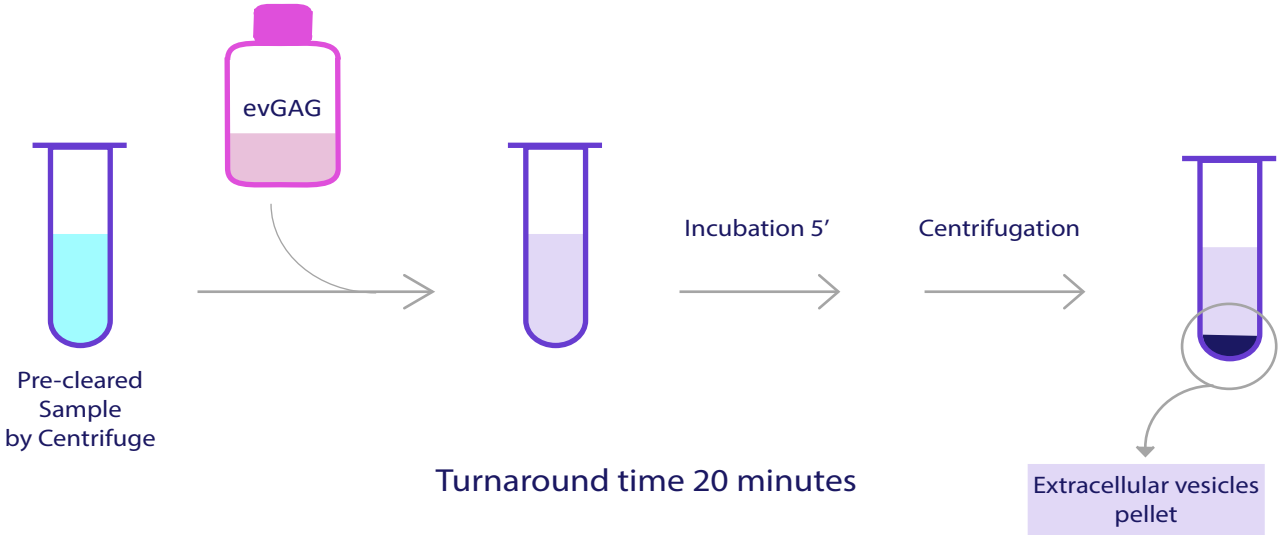
Characteristics

Category: Pre-analytical
Isolation method: Affinity
Sample Type: Urine
Sample Volume: 0.5 - 2mL
Reagent Volume: 2x10mL

Advantages

- High sensitivity and specificity
- Rapid and simple process (20 minutes)
- Inexpensive
- Small sample needed
- No specific equipment needed

How it works

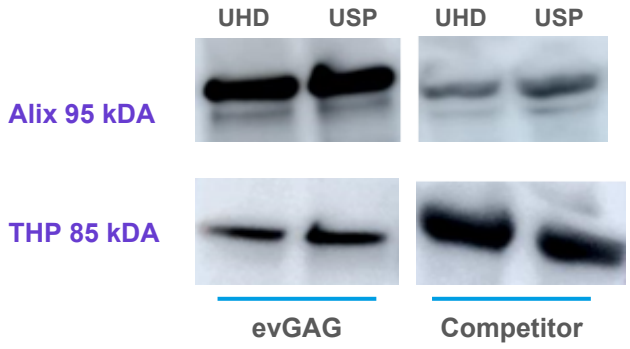


Turnaround time 20 minutes

Next generation of extracellular vesicle isolation

evGAG - Performance of evGAG technology in urine

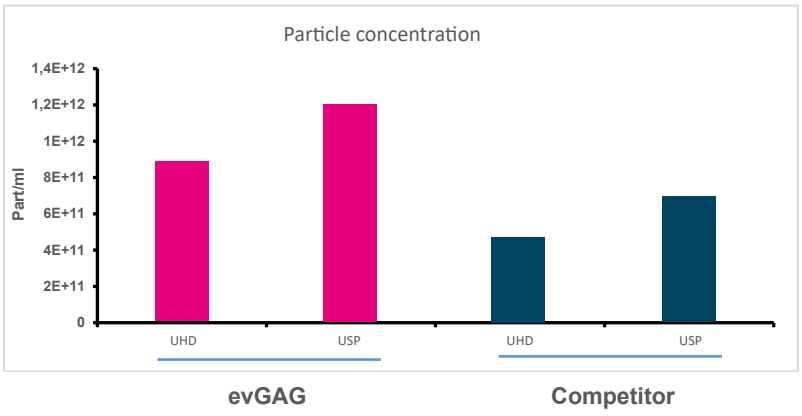
Urine samples were processed with evGAG. Briefly, 1 mL of urine from healthy donor (UHD) and 1 mL of urine from healthy donor spiked-in (USP) with extracellular vesicles purified from colon cancer cell line containing KRASG13D mutation (cat nr. EXO-REF-KRAS-G13D-2) were incubated with 2 mL of evGAG each, for 5 minutes and then centrifuged at 3,000g for 15 minutes. This results in a precipitated pellet containing EVs.

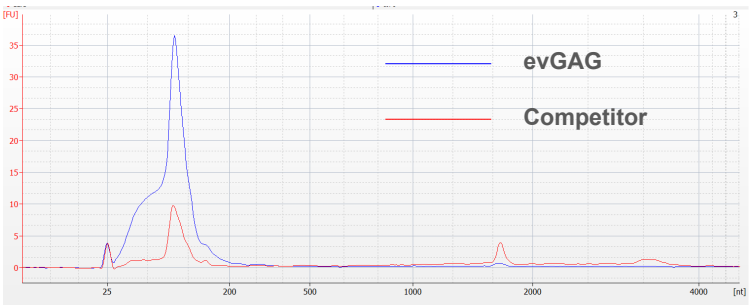


Western Blot Analysis of extracellular vesicle markers Alix, confirmed that the concentration of EVs isolated by evGAG was higher compared to the competitor. On the contrary, uromoduline (THP) as not specific target is less abundant in EVs isolated by evGAG than competitor.

Lorem ipsum

The pellet containing EVs was resuspended in PBS and analyzed by Nanoparticle Tracking Analysis (NTA). Nanoparticles concentration is 2 times higher in EVs isolated with evGAG in both UHD and USP samples (8.8 x 10^{11} and 1.2 x 10^{12} respectively) than to EVs isolated with competitor in both UHD and USP samples (4.6 x 10^{11} and 6.9 x 10^{11} respectively).





EV RNA was isolated from urine using the extraction phase of SoRTEV™ and analyzed with Bioanalyzer. The results showed that extracellular vesicles purified with evGAG contain the highest yield of small RNA content (<200 nt) with a main peak at 100 nt indicating a most efficient extraction of small exoRNA from urine as oppesed to EVs isolated with competitor kit which showed some longer RNA species including 18S and 28S rRNA but a lower peak corresponding to small exoRNA.