Exosomes are small endosome derived lipid nanoparticles (50-120 nm) actively secreted by exocytosis by most living cells. Exosome release occurs either constitutively or upon induction, under both normal and pathological conditions, in a dynamic, regulated and functionally relevant manner. Both quantity and molecular composition of released exosomes depend on the physiological state of the parental cells.

Save time and get pure exosomes for your research

HansaBioMed’s purified lyophilized exosomes are obtained from different biological sources including human biofluids and supernatants from a large number (over 100) of tumor cell lines (cell lysates are also available). Check the list in HBM catalog and website (http://exotest.eu/online_orders/standards)

Use HBM Exosome standard for...

- Assay calibration
- Control (spike-in) for exosome quantification
- Protein marker analysis using different techniques
- Extraction and analysis of exosomal nucleic acid
- Standardized positive controls for immunocapture performance evaluation

Advantages

- High quality purified exosomes
- Easy to reconstitute
- Easy to ship and store (+4°C)
- Long term storage stability (36 months)
- Exosomes available from a large cell line bank (over 100 cell lines)
- Exosomes available from different body fluids (Plasma, Serum, Urine, Saliva)

Lyophilization is the ideal method for preparing and preserving exosome stability for long-term storage at +4°C

Lyophilized exosomes are easy to ship and store. Exosomes are isolated through a combination of ultracentrifugation and microfiltration procedures. Exosomes are subsequently quantified and validated for overall protein content and particle number by Nanoparticles Tracking Analysis (NTA, NanoSight). Lyophilization does not alter the stability of exosomal proteins and nucleic acids, in comparison to other storage methods, including storage of fresh exosomes at -20°C.

Figures 1 and 2 compare the effect of lyophilization vs freezing at -20°C, showing no difference in protein expression at WB and exosome integrity at NanoSight respectively.
HBM-Exosome Standards are suitable for many applications in exosome research

HBM Exosome Standards are suitable for many different applications and techniques such as ELISA assay, FACS, western blotting and NTA. Figures 3, 4 and 5 show some applications of our lyophilized exosomes. Figure 3 shows a profile of common protein markers in exosomes purified from human plasma. HBM-PEP-30 standards are used for detection of each marker in ELISA assay, by using HBM immunoplate for Overall exosome capture from human plasma. In Figure 4 HBM-COLO-100 are used to generate a standard curve suitable for exosome quantification by ELISA assay (HBM-ExoTEST™). In addition, HBM Exosome Standards are suitable for exosomal nucleic acid extraction and downstream analyses. Figure 5 shows amplification of β-Actin transcript from total RNA obtained from HBM-COLO-100, HBM-MM1-100 and HBM-BLCL21-100 standards. RNA extraction was performed using the HBM-RNA extraction kit.

HBM Exosome Standards guarantee higher purity and performances at a lower price than similar products

Comparison of the HBM Exosome Standards from human serum (HBM-PES) vs human serum exosomes sold by a competitor: 50 μg of each purified exosomes standard was analyzed on ELISA to detect exosomal markers (CD9 and CD63). Figure 6 shows higher signal for HBM exosomes (for both 50 and 30 μg) than Competitor’s exosomes (50 μg). Exosome count by NTA (NanoSight) confirmed these results, revealing a significantly higher count of exosomes using HBM Exosome Standard (Figure 7).

Lyophilization and Purification Service

In addition to the products described in this leaflet HansaBioMed also provides services for exosome purification, quantification and analysis. We can facilitate your research with professional services performed by scientists experienced in the exosome field and using state of art equipment. A wide range of services is offered, from simple exosome purification and quantification at NanoSight and ExoTest to biomarker discovery or other contract research activities.