

EXO-TotalRNA

Exosome RNA extraction kits

A selection of kits for extraction and purification of total RNA, including small-RNAs, from immunocaptured exosomes

Exosomes RNA extraction Kits

HBM has developed optimized solutions for the efficient extraction of high-quality total RNA (miRNA and mRNAs) from the overall exosomes and microvesicle population (EXO-TotalRNA) or from tumor-specific exosome subpopulation (TumorEXO-TotalRNA: enrichment of tumor-specific exosome population from human biofluids), which helps to facilitate the identification of tumor miRNA or mRNAs signatures from human biofluids or cell culture media.

Use HBM RNA extraction kits for miRNA and mRNAs analysis

Kits integrate a proprietary immunocapture solution (immunobeads) and reagents for total RNA extraction. HBM immunobeads can capture the overall exosome population from a wide range of media, including cell culture supernatants and human biofluids (plasma, serum, urine, etc) as well as enrich some specific exosome subpopulations (tumor-derived exosomes). The captured exosomes are subsequently lysed with an optimized lysis buffer and total RNA is purified using spin columns with a fast and user-friendly process. Eluted RNA can be used for downstream analyses or stored at -80°C. Exosome standards for positive control are also included in the kit.

Applications

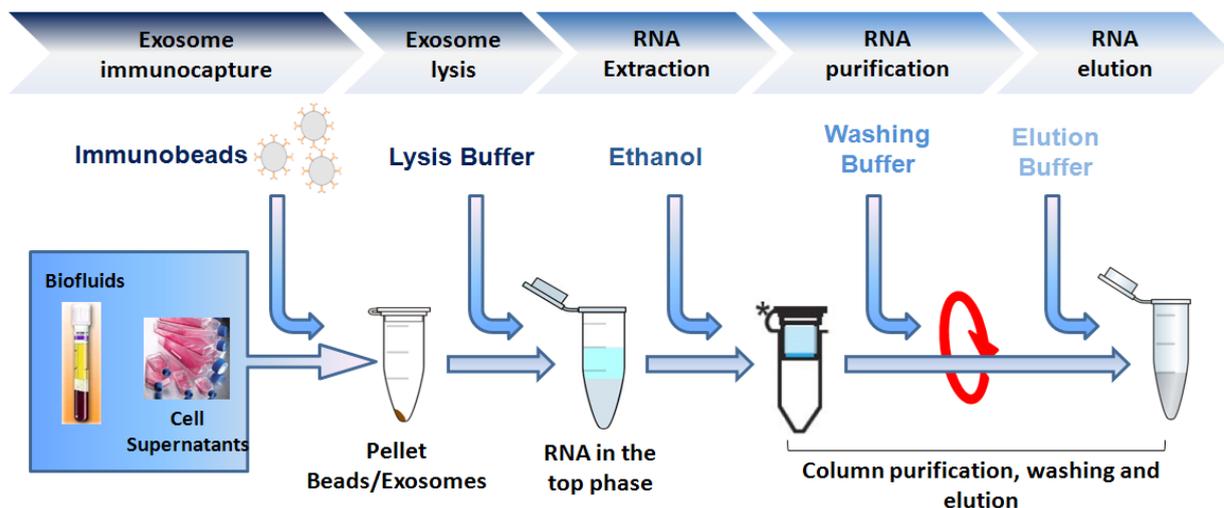
- Direct capture and exosome RNA extraction from human biofluids and cell culture media without initial exosome purification step.
- Simultaneous miRNA and mRNA profiling (qRT-PCR, RT-PCR, microarray).
- Enrichment of tumor-derived exosomes for cancer miRNA marker profiling.

Advantages

- High yield of total RNA (including small RNAs)
- Fast and user friendly protocol
- Small starting amount of sample (less than 1 ml).
- Better RNA yield than similar products.
- The only kit on the market providing Exosome Standards as control.

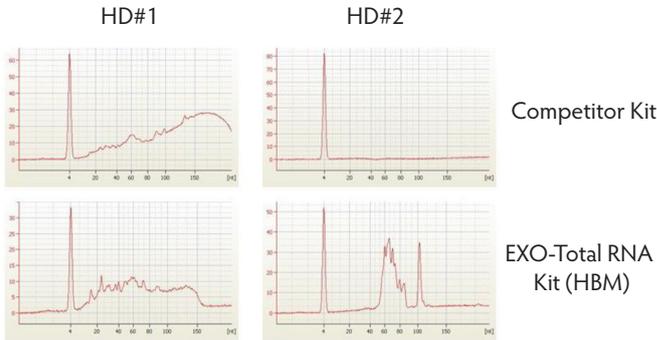
Cat. Code	Description	Size
EXO-TotalRNA		
Overall Exosome Immunocapture and RNA extraction Kit (from human biofluids and cell media)		
HBM-RNA-BOF-10/#	RNA extraction from overall exosome population captured with immunobeads	10 reactions
HBM-RNA-BOF-20/#		20 reactions
TumorEXO-Total RNA		
Tumor-derived Exosome Immunocapture and RNA extraction Kit (from human biofluids)		
HBM-RNA-BTF-10/#	RNA extraction from tumor-derived exosome population captured with immunobeads	10 reactions
HBM-RNA-BTF-20/#		20 reactions
RNA Basic Kit*		
HBM-RNA-B20	RNA extraction from pre-isolated exosome	20 reactions
HBM-RNA-B30		30 reactions

*RNA basic kit does not contain immunobeads for exosome isolation. It is designed for exosome total RNA (miRNA + mRNAs) from pre-isolated exosomes. Compatible with exosome isolated via ultracentrifuge, chemical precipitation, size chromatography, immunocapture etc.

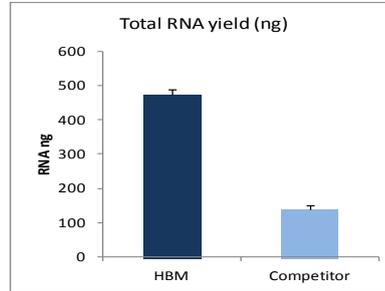


EXO-Total RNA allows extraction of high quality of exosome-derived RNAs from low volumes of sample and better performance than competitors.

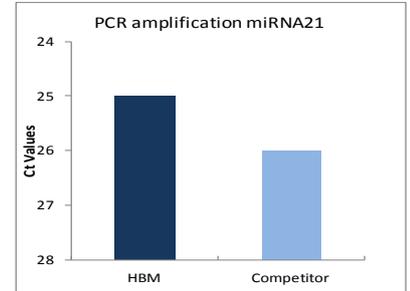
Efficiency of EXO-TotalRNA kit was tested vs a competitor kit for RNA extraction from plasma derived exosomes. Extraction of total exosome RNA was performed from 100 µl of healthy donor plasma (HD #1 and #2) with Competitor Kit or with the EXO-TotalRNA Kit (HBM). RNA quality was evaluated by electropherogram (Fig 1) with Small RNA microfluidic chips (Agilent 2100 Bioanalyzer). RNA yield was quantified by Nanodrop (Fig 2) and extracted RNA was subsequently retrotranscribed using the miScript II RT kit (Qiagen). miR-21 marker was amplified by qPCR (Fig 3).



1. Electropherograms of small RNA extracted with HBM EXO-Total RNA kit and Competitor (Agilent 2100 Bioanalyzer)



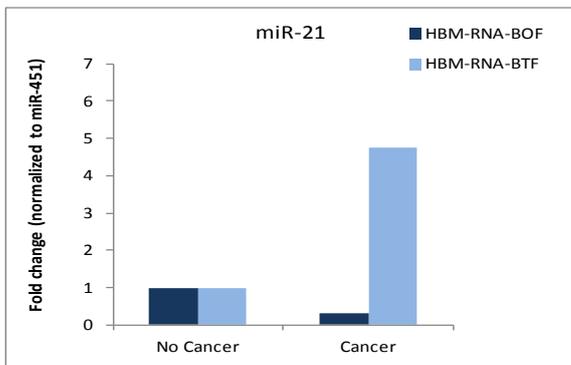
2. Nanodrop quantification of total RNA yield



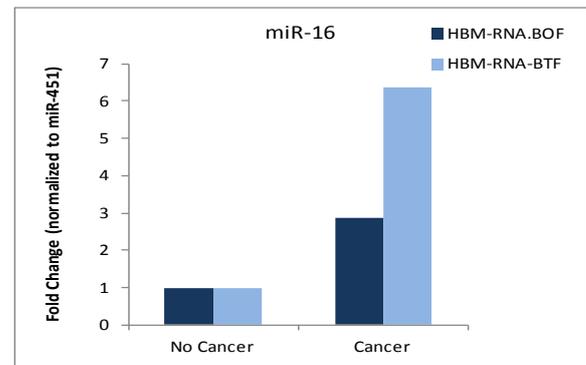
3. miRNA 21 amplification by qPCR

TumorEXO Total RNA allows enrichment of cancer derived miRNA from plasma samples.

Total Exosome derived RNA was extracted from 100 µl of plasma from a healthy donor and a cancer patient using RNA kit EXO-Total RNA (HBM-RNA-BOF) for immunocapture of overall exosomes and RNA extraction or TumorEXO Total RNA (HBM-RNA-BTF), for tumor-derived exosome enrichment and RNA extraction, respectively. Total RNA extracted was retrotranscribed using the miScript II RT kit (Qiagen) and the expression level of miR-21 and miR-16 were measured relative to control miR451 by qPCR. Usage of TumorEXO Total RNA shows enrichment in miR-21 and miR-16 in cancer patient (Fig 4 and 5).



4. Enrichment in miR-21 expression level in cancer when Tumor-EXO Total RNA kit is used.



5. Enrichment in miR-16 expression level in cancer when Tumor-EXO Total RNA kit is used.

RNA and DNA Extraction and Analysis Service

In addition to the products described in this leaflet, HansaBioMed also provides services for RNA and DNA extraction, quantification and analysis. We can facilitate your research by providing 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 RNA/DNA purification and quantification to biomarker discovery using the most advanced analytical technologies (e.g. NGS).