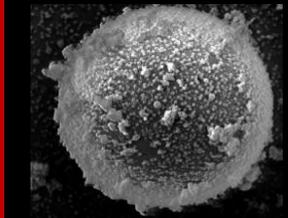


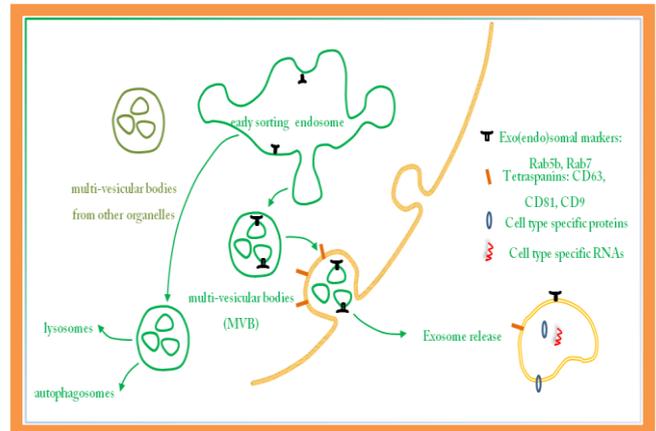
ExoTEST™ Exosomes immunocapturing

Simple ELISA assay for exosomes capture, quantification and characterization from culture supernatants, plasma or other biofluids



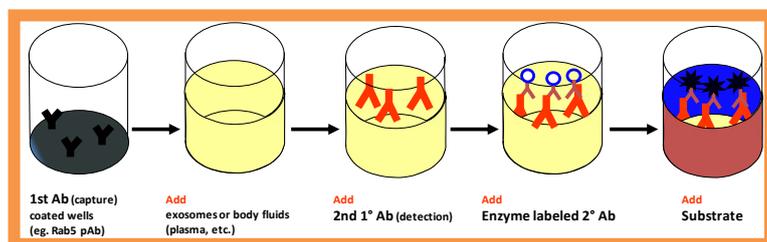
Exosomes are small endosome-derived lipid nanoparticles (50-120 nm) actively secreted by exocytosis by most living cells. Exosome release occurs either constitutively or upon induction, under both normal and pathological conditions, in a dynamic, regulated and functionally relevant manner so that both amount and molecular composition of released exosomes depend on the state of a parent cell. This is one of major premises of employing exosomes for research and diagnostic purposes. Exosomes have been isolated from diverse cell lines (hematopoietic cells, tumor lines, primary cultures, virus infected cells) as well as from biological fluids in particular blood (e.g. serum and plasma from cancer patients) and other body fluids (bronchoalveolar lavage fluid, pleural effusions, synovial fluid, urine, amniotic fluid, semen, saliva etc). Exosomes have pleiotropic physiological and pathological functions and an emerging role in diverse pathological conditions such as cancer, infectious and neurodegenerative diseases.

- Exosomes incorporate a wide range of membranes and cytosolic proteins involved in many cellular functions and reflecting both their endosomal origin and a protein fingerprint unique for parent cell type and condition.
- Exosomes shuttle also RNA molecules, mRNAs and miRNAs, both classes proved to be functional in target cell, being translated or modulating gene silencing respectively. Overall, exosome molecular composition distinguishes resting from activated, healthy from diseased cell.



ExoTEST™ IS A FUNDAMENTAL TOOL FOR EXOSOME-BASED RESEARCH

ExoTEST™ is a novel, reliable, versatile and easy double sandwich ELISA assay for quantitative and qualitative analysis of exosomes.

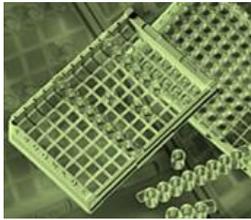


- ExoTEST™ captures exosomes from different biological samples including cell culture supernatants and plasma samples by using antibodies for specific exosome surface proteins.
- Quantification and characterization of exosomal proteins is subsequently performed by using detection antibodies of interest

ExoTEST™ kit consist in pre-coated single well ELISA plates combined with specific detection antibodies that allows:

1. Exosome capture and quantification
2. Exosome comprehensive profiling
3. Specific diagnostic applications

EXOTEST™ CHARACTERISTICS AND ADVANTAGES



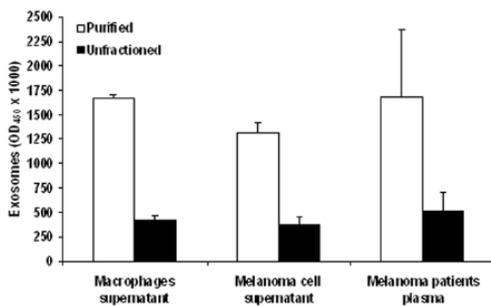
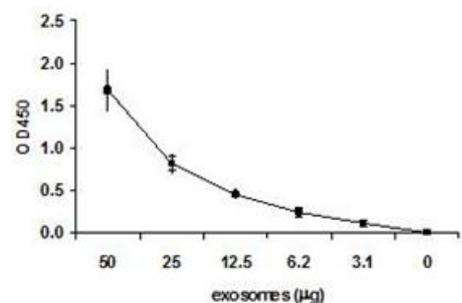
- ExoTEST™ 12x8 pre-coated plates are stabilized and suitable for long term storage
- Choice between transparent and white pre-coated plates enables both chromogenic and luminometric detection
- Flexible and multiplex assay design – a single ELISA plate allows simultaneous assessment of multiple antigens in a single sample as well as screening of a large number of samples
- Panel of detection antibodies can be used either customized by HBM or by the user
- Simple and fast procedure

- ExoTEST™ allows exosome capture and analysis from different biological samples (cell supernatants, plasma, urine, CSF)
- It permits enrichment with cell/tissue specific exosomes from body fluids and has some immediate readouts, namely origin, quantity and molecular composition of isolated exosomes.

HIGH SPECIFICITY AND SENSITIVITY

ExoTEST™ enables reliable and precise quantitative measurement and comparison among samples and individual experiments. Standard exosome preparations are provided for making standard curves and assay calibration.

Example of a standard curve obtained with exosomes derived from human melanoma HBM-MEL1 cell line.



ExoTEST™ enables both capture and analysis of exosomes purified from cell supernatants and human biofluids as well as directly from unfractionated samples

Example of quantification of exosomes from ultracentrifuged and unfractionated cell supernatant and human plasma samples⁷

COMPREHENSIVE EXOSOME PROFILING - MULTIPLE ANTIGENS AND RNAs

By employing different combinations of capture and detection antibodies ExoTEST™ can be customized for assessing multiple antigens in a total exosome population in the sample or in a defined exosome sub-population. Characterization of samples of interest can be complemented with subsequent RNA (mRNA or miRNA) extraction and analysis from captured exosomes. The upstream enrichment in specific exosome sub-population(s) significantly reduces the background noise that impairs the analysis of RNA sequences.

RESOLUTION BETWEEN DIFFERENT CELL TYPES AND BETWEEN HEALTHY AND DISEASED SAMPLES

- ExoTEST™ enables detection of exosome associated antigens indicative of type and condition of the parent cell, providing thus a platform for assessment of cell state and function. It is suitable for analysis of circulating exosomes from human body fluids and detection of known and novel biomarkers in routine clinical samples.
- ExoTEST™ allows quantitative assessment specific exosomal populations defined by antigens differentially expressed under normal and pathological conditions.

Example of quantification of specific exosomes displaying tumor specific markers⁷ in human plasma samples

