



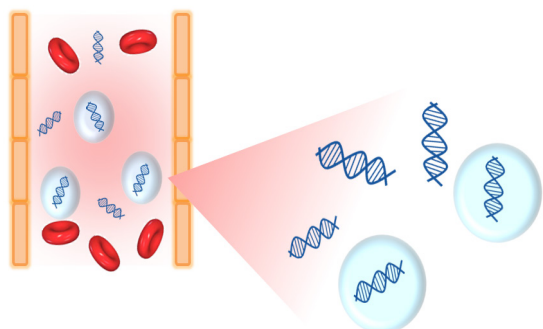
EXO-DNAc



Circulating and EV associated DNA extraction kit

Circulating and EV associated DNA extraction kit optimized for digital PCR analysis

Circulating and EVs associated DNA



Circulating DNA is emerging as a novel non-invasive tool for patient's stratification and disease monitoring. While most of the research has focused on circulating cell-free (cfDNA) or circulating-tumor-cell-(CTC)-derived DNA, extracellular vesicle-(EVs)-associated DNA (EV-DNA) is emerging as a third valuable "liquid biopsy" platform. In fact genomic single or double-stranded DNA and mitochondrial DNA have been recently detected in extracellular vesicles. In particular the

majority of double-stranded DNA seems to be associated with tumor derived exosomes (Thakur BK et al. 2014; Kalthert et al. 2014.) where it represents the entire genome of the cancerous tumor from which exosomes were derived. This discovery corroborates the potential of exosomes, which can be easily obtained from a simple blood test.

Get genomic DNA with EXO-DNAc Kit

EXO-DNAc Kit combines the ability of our reagent DNA-Prep to co-isolate EVs and circulating DNA from biofluids (plasma, urine, serum etc..) or culture supernatants with a user friendly system for DNA purification. Isolated vesicles are lysed with the appropriate lysis buffer and DNA is purified by spin columns and optimized buffers with a fast turnaround time (approximately 30 minutes). A. Finally, EXO-DNAc provides an appropriated DNA concentrator for concentrating the yield (4 fold concentration) and increasing the purity of the DNA to the levels required for digital PCR analysis.

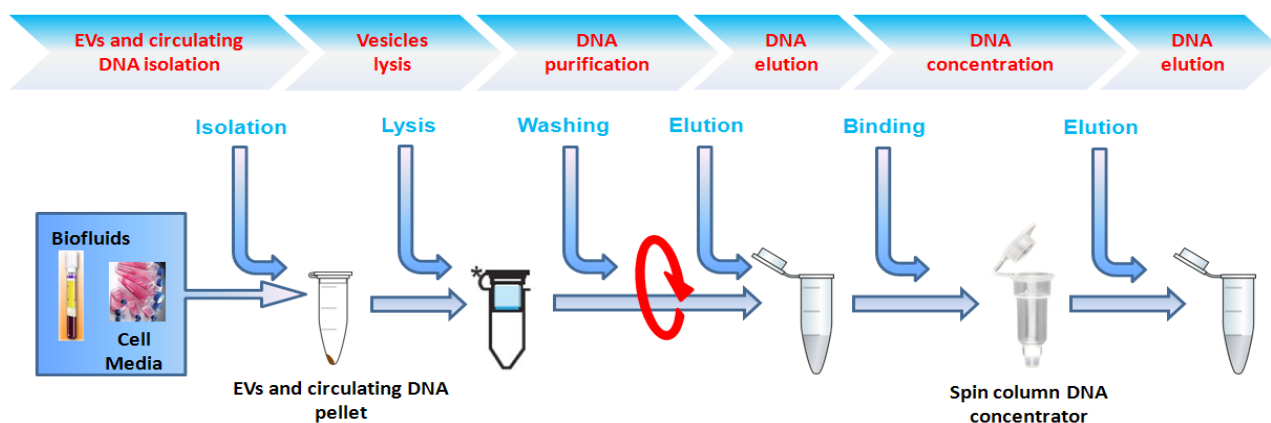
Cat. Code	Description	Size
EXO-DNAc: Isolation of circulating and Exosome-associated genomic DNA optimized for digital PCR		
HBM-DNAc-PS-20/#	Isolation of circulating and exosome associated DNA from plasma and serum.	20 reactions
HBM-DNAc-PS-40/#		40 reactions
HBM-DNAc-C-20/#	Isolation of circulating and exosome associated DNA from urine and cell culture media.	20 reactions
HBM-DNAc-C-40/#		40 reactions

Applications

- Discovering of mutations by digital PCR or qPCR
- Direct exosome capture and DNA purification from biofluids of cell media without time consuming purification steps.
- Isolation and profiling of genomic EV-associated DNA by DNase treatment.
- DNA can be used for NGS

Advantages

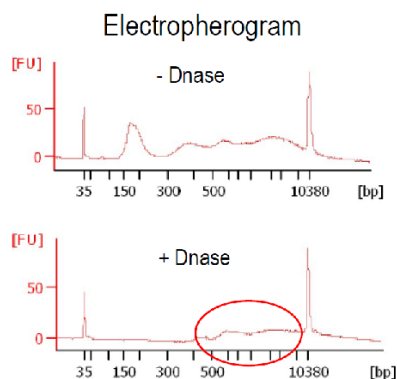
- Highly pure circulating and EVs-associated DNA
- Fast and easy protocol
- Small volume amount required
- Suitable for concomitant profiling of cell-free circulating DNA and EV-associated DNA



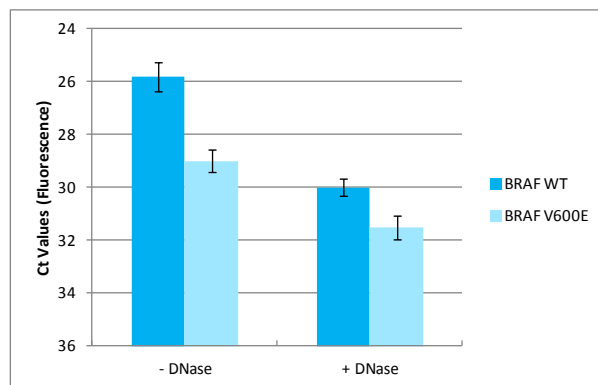
* Analysis can be limited to EV-associated DNA treating the pellet containing circulating DNA and EVs with DNase. Extracellular vesicles protect the internal DNA from the DNase digestion.

Exosome-associate DNA is suitable for point mutation analysis by allele-specific PCR.

Healthy donor serum was spiked with 100 µg of purified exosome from BRAFV600E-positive A375 melanoma cell lines. Vesicles and circulating DNA were isolated by precipitation with DNA-Prep contained in EXO-DNAc kit and treated with or without Dnase 1, to distinguish circulating + Exosome related and only Exosome related DNA. Following digestion, DNA was extracted with EXO-DNAc kit and analyzed by bioanalysis and allele-specific qPCR (Fig 1 and 2).



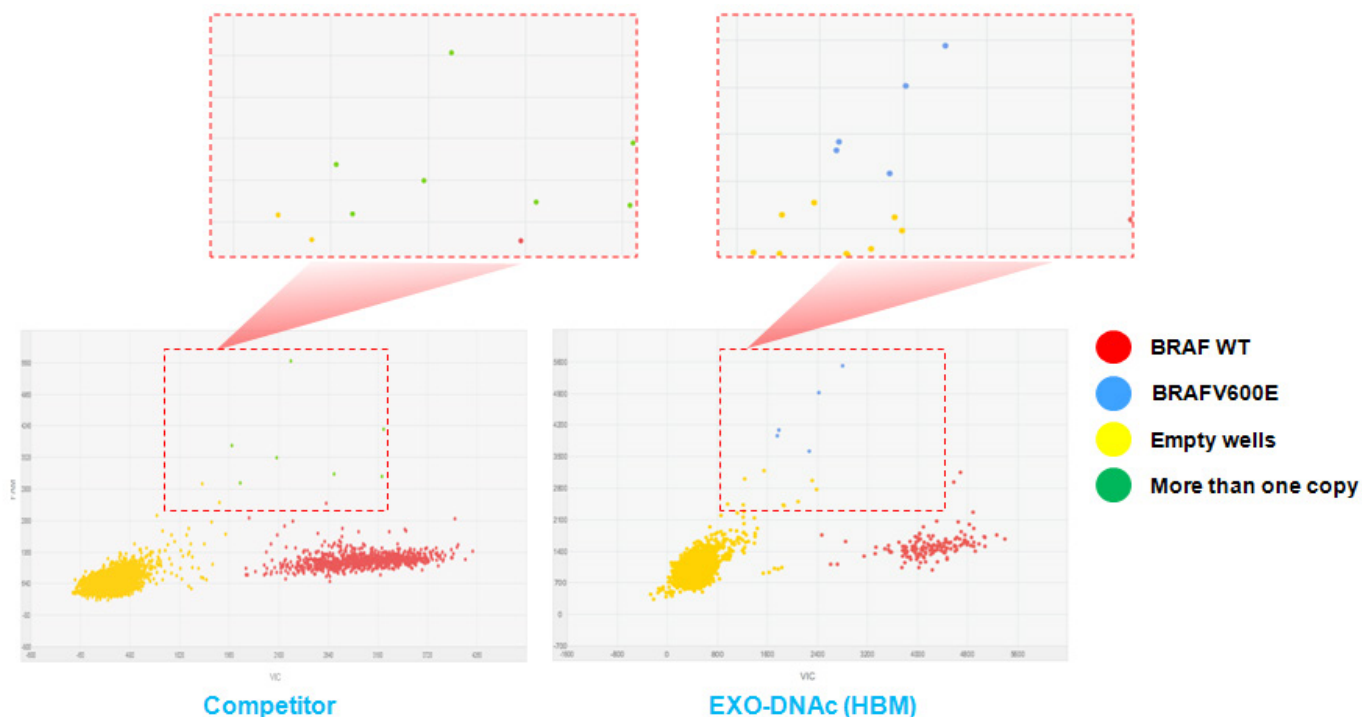
1. Electropherograms of genomic DNA extracted with EXO-DNAc Kit with or without Dnase treatment



2. BRAF WT (wild type) and BRAF V600E amplification by qPCR from DNA extracted with EXO-DNAc Kit with or without Dnase treatment.

EXO-DNAc is a flexible platform for detecting actionable mutations in cancer patients by dPCR

Detection of the mutation AR-V7 by digital PCR in genomic DNA of serum of a metastatic prostate cancer patient treated with abiraterone. Circulating and EVs associated DNA was extracted by EXO-DNAc kit and a competitor kit. Digital PCR analysis revealed mutations in DNA extracted with EXO-DNAc, whereas no mutation were detectable in DNA extracted with competitor kit.



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).