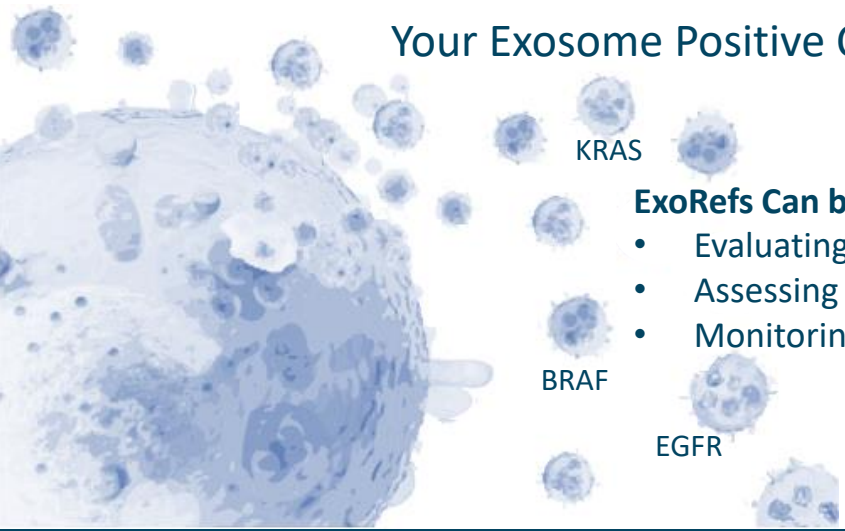
ExoRef™ : Exosome-based Reference Standards

Monitor the performance of your exosome-based diagnostic workflow from plasma to result.

Technical Specifications		
Category	Exosome-based reference standards, containing cancer-relevant mutations;	
Format	Dry pellet, to be resuspended by the user with provided Resuspension Buffer	
Characterization	• Concentration of vesicles • Size distribution of vesicles • Purity Index (^1ref) • Mutation allelic frequency orthogonally verified by digital droplet PCR (ddPCR)	
Mutations available*	BRAF V600E	(Cat. N. EXO-REF-BRAF-V600E)
	KRAS G13D	(Cat. N. EXO-REF-KRAS-G13D)
	KRAS G12S	(Cat. N. EXO-REF-KRAS-G12S)
	EGFR T790M	(Cat. N. EXO-REF-EGFR-T790M)

* Other mutations and WT are available upon request. Contact us at info@exosomics.eu

Your Exosome Positive Controls



ExoRefs Can be used as reference standards for:

- Evaluating your exosome isolation
- Assessing the extraction of DNA from exosomes
- Monitoring your Dx workflow

ExoRef™: Your Renewable, Exosome-based Positive Controls

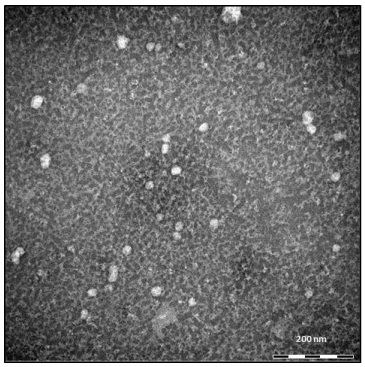


Figure 1. TEM of resuspended ExoRef

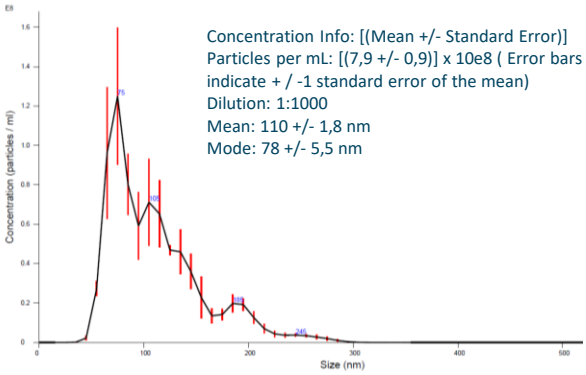


Figure 2. NTA trace of ExoRef diluted 1:1000

ExoRef are exosomes with verified biophysical characteristics. Dried ExoRef were reconstituted in resuspension buffer and analysed by Transmission Electron Microscopy (TEM) and Nanoparticle Tracking Analysis (NTA). Fig. 1 (TEM) shows exosomes (white dots), intact, of approximately 70nm in diameter. Proprietary sample purification and drying ensure exosome stability and integrity. Once resuspended, ExoRef are stable at -20° for 3 months. Figure 2 shows size distribution of a typical lot of ExoRef.

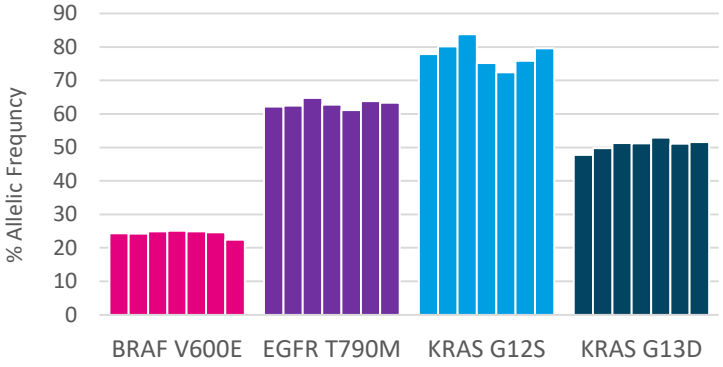


Fig 3. ExoRef are exosomes with verified genetic characteristics. DNA was extracted from seven tubes randomly picked from one batch of ExoRef containing BRAF V600E (pink), EGFR T790M (purple), KRAS G12S, (cyan) or KRAS G13D (blue) gene mutations. DNA was then probed with the respective ddPCR assay to measure allelic frequency of the mutation contained in exosomes. Minimal intra-batch variability was observed for each mutation.

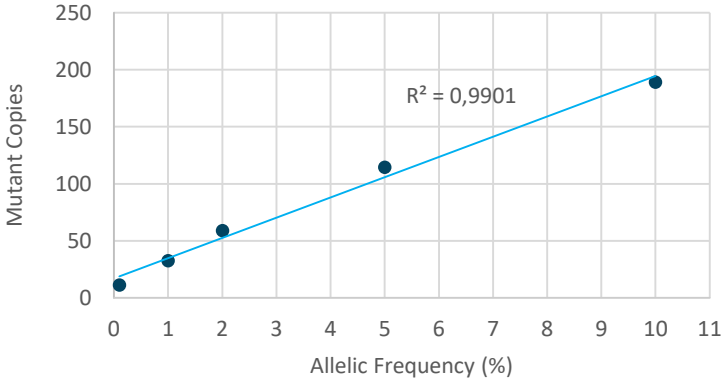


Fig 4. ExoRef mutation can be detected at an allelic frequency as low as 0,1% with 11 copies of the mutated allele - by ddPCR. Mutation-containing ExoRef were mixed with wild type ExoRef (5µg total protein content) to keep total Exosome count constant but progressively decrease the mutation allelic frequency down to 0.1%. Such ExoRef were spiked into healthy donor plasma. Tumour-exosome DNA was extracted by using SeleCTEV™ DNA Enrichment Kit and then probed with the respective ddPCR assay to measure the total copies of the mutation contained in the exosomes.