CA19.9 or CA15.3 but corresponds also to an inhibitor of PCR not enabling ctDNA detection. We aimed to evaluate the impact of heparinase addition on heparinized plasma samples to recovery the possibility of ctDNA analysis on samples initially dedicated for tumor markers analysis.

Methods: Plasma samples were collected in heparinized (n = 194) and EDTA (n = 8) tubes from hormone receptor-positive metastatic breast cancer (HR+MBC) patients resistant to aromatase inhibitor (AI) treatment (n = 144) and from newly diagnosed pancreatic adenocarcinoma (PA) patients (n = 50). ESR1 and KRAS mutations were used as targets for ctDNA detection in HR+MBC and PA patients, respectively. ctDNA was detected by droplet digital PCR after an amplification step either without or with heparinase (H- and H+ respectively). PCR efficiency and ctDNA detection rate were compared between H- and H+ subgroups as well as with EDTA subgroup.

Results: Heparinase addition improved significantly PCR efficiency for 91/144 HR+MBC and 26/50 PA patients enabling ctDNA detection in 22/91 (24%) and 13/26 (50%) of these patients. Moreover, heparinase condition did not quantitatively and qualitatively alter the ctDNA detection for patients without heparin inhibition of PCR and comparable results for ctDNA detection were obtained between H- and EDTA subgroups.

Conclusions: Heparinase addition allows removing the heparin inhibition on ctDNA amplification and to detect and quantify accurately ctDNA levels by dPCR in the heparinized plasma samples.

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133P Heparinase enables reliable quantification of circulating tumor DNA from heparin plasma samples by droplet digital PCR

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Background: Circulating tumor DNA has been highlighted as a potential “liquid biopsy”, which can be used to identify prognostic and predictive alterations in oncology. Heparin is often used as plasma anticoagulant source for tumor marker analysis such as