

Cancer Center Support Grant – CCSG 2018

“Rapid Isolation of Circulating Exosomes for
Early Detection of Pancreatic Cancer”

UC San Diego
MOORES CANCER CENTER

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SCIENTIFIC ABSTRACT

Exosomes are small vesicles shed from cells into the blood that carry protein biomarkers. The Heller laboratory has developed an alternating current electrokinetic (ACE) microarray device capable of isolating exosomes from small volumes (25 μ l) of blood and screening them for protein biomarkers directly on-chip within two hours. An ACE immunoassay, which combines the validated pancreatic ductal adenocarcinoma (PDAC) biomarker glypican-1 (GPC1) and the exosome-selective protein CD63, distinguishes patients with PDAC from healthy subjects with high sensitivity and specificity. The goal of this project is to further optimize and validate this assay as an early detection test for PDAC.