

HemaSure™ - OMICs

Human gDNA, cfDNA, Circulating Tumor Cells, RNA, FACS From the Same Blood Sample

Mawi DNA Technologies introduces a groundbreaking product for ambient collection, stabilization, and transportation of whole blood samples. HemaSure-OMICs enables isolation of cfDNA, CTC, and RNA from the same sample. Collected cells are maintained intact, making them also suitable for FACS analysis.

Current blood stabilization technologies can contain hazardous formaldehyde or formaldehyde-like fixatives that stabilize cfDNA or CTC or RNA but not all three from the same sample. These types of fixatives are classified as hazardous and need to be handled with caution. Another drawback is that the stabilized cfDNA usually co-purifies with Human gDNA, making it more difficult to analyze. On top of all that, the maximum shelf life of stabilized CTC is no more than 72 hrs.

RNA is a crucial tool in advancing our understanding of health and disease in humans and animals. However, RNA is particularly fragile and degrades quickly as soon the cells leave the internal environment of the body, such as when blood is drawn. A reliable technology to stabilize the sample right after collection is needed to reduce the degradation rate and maintain RNA integrity for proper analysis. Currently, efficient stabilization of RNA in body fluids, cells or tissues requires expensive cold chain involvement or relatively toxic fixative, which increases the cost per sample and urgency for processing the sample, leaving very little room for error.

Whole blood can be a great source of stable RNA. However, commercially available whole blood collection tubes for RNA stabilization have a few limitations:

- Limited blood volume collection (< 3 mL)
- At most, allows 72 hrs stabilization when transported between 15 – 25° C
- Complex and specialized RNA extraction procedures

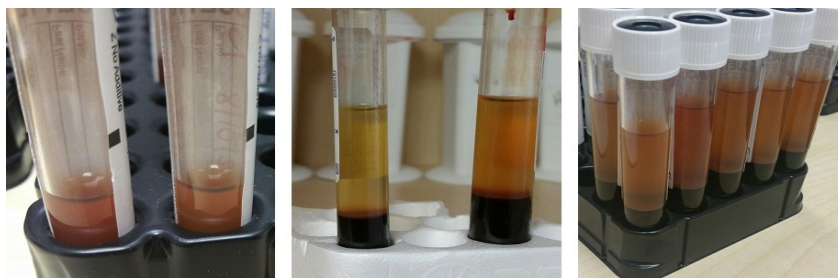
To overcome these hurdles and enable widespread and efficient collection and analysis of whole blood Mawi DNA Technologies has developed the HemaSure-OMICs Collection Tube products.

HemaSure-OMICs Whole Blood Collection Tubes feature:

- Non-toxic stabilization of whole blood; free of formaldehyde or formaldehyde-like ingredients
- cfDNA (up to 14 days), CTC (up to 8 days), and RNA (up to 8 days) are stabilized at room temperature in the same blood tube (temperature range of 25 – 45° C)
- Available in 3, 6, and 9 mL plastic vacuum filled blood collection tubes as well as a 250µl microtainer for blood drops for easy shipping and durability
- Compatible with any commercially available manual or automation-enabled kits for purification of cfDNA and CTC from whole blood. Please contact us for recommended RNA extraction protocols.

Room Temperature Storage for 8 Days Post-Collection

HemaSure-OMICs 3, 6, and 9ml Tubes: Collected blood samples left at room temperature for 8 days. Clean and efficient fractionation without centrifugation.



HemaSure™



Biosampling Reinvented™

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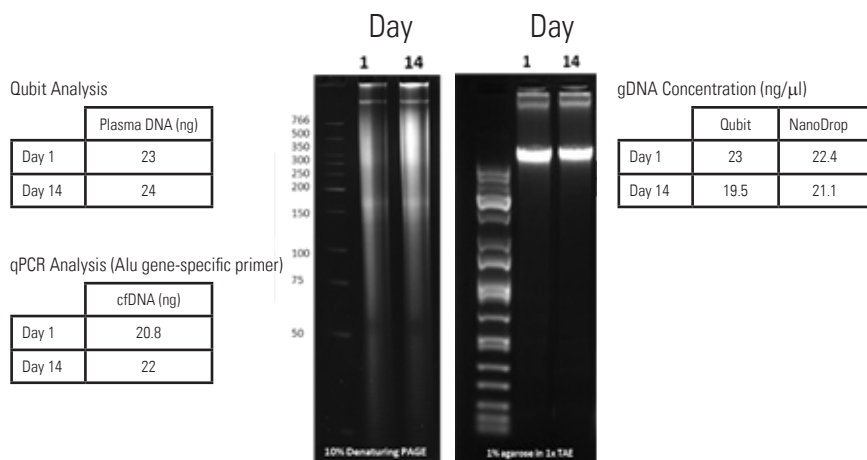
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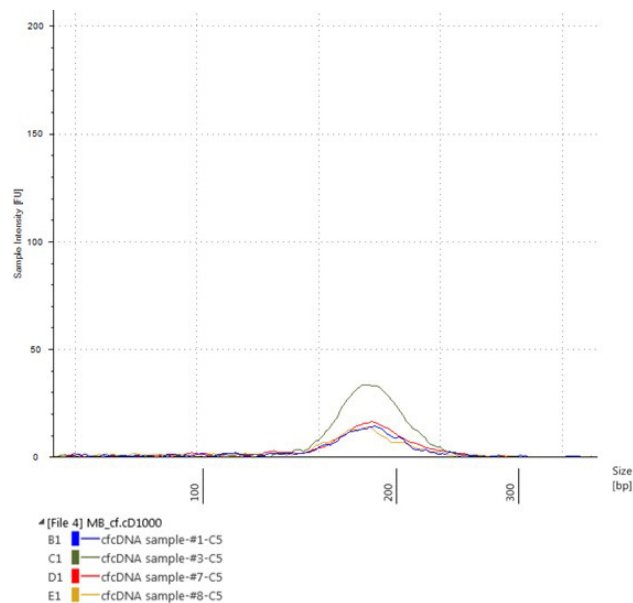
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High Human gDNA and cfDNA Integrity 14 Days Post-Collection

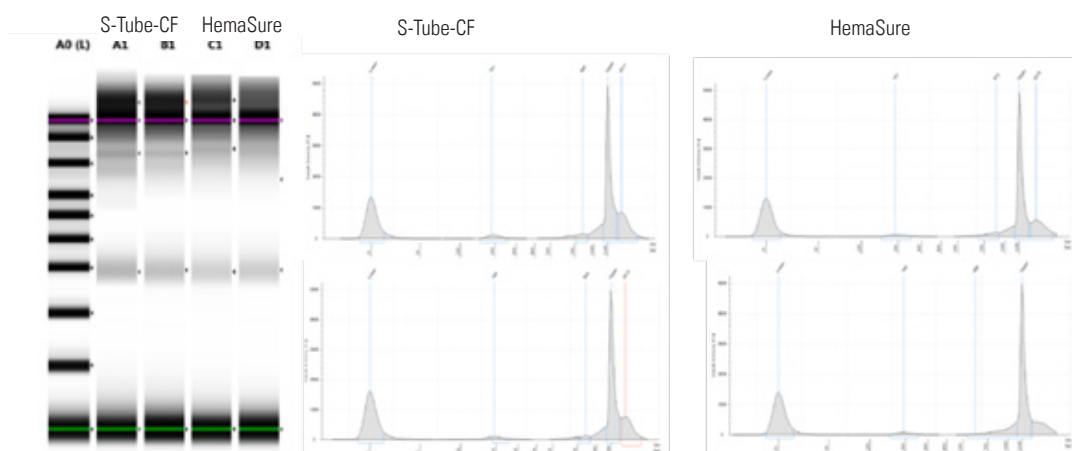


HemaSure-9 blood draw incubated for 14 days at room temperature. Plasma was separated then DNA was extracted from 1 mL of collected plasma from healthy control using QIAamp circulating NA kit (150 μL elution). Two time points were tested: Day 1 and Day 14. The extracted plasma DNA was analyzed using 10% Denaturing PAGE, Qubit and qPCR with Alu gene-specific primer sets. We used QiaAmp mini blood kit to extract gDNA from 200 μL of buffy coat (blood cells deprived from plasma) and analyzed on 1% agarose in 1x TAE buffer.

Reproducible cfDNA Stability



Tapestation Analysis 8 Days Post-Collection

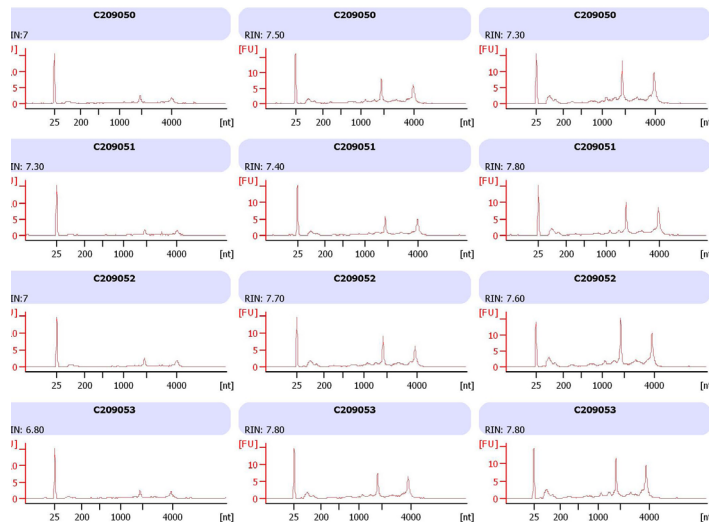
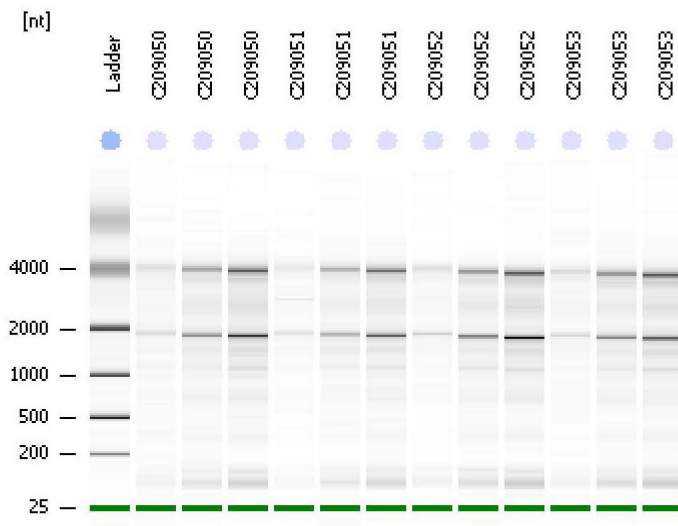


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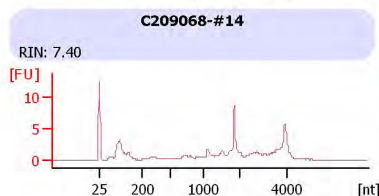
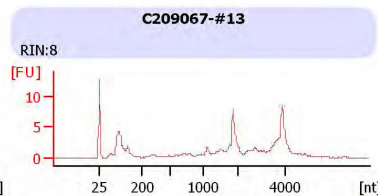
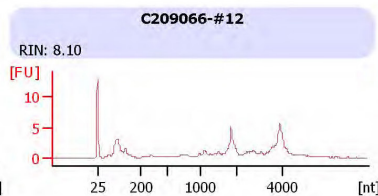
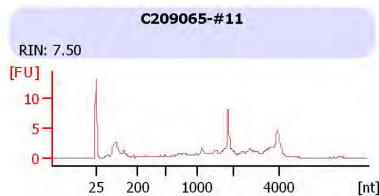
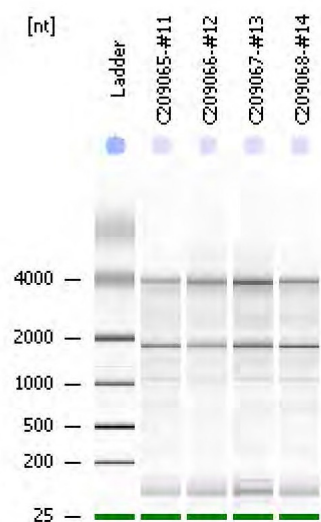
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All RNA Species Equally Stabilized and Purified including microRNA

HemaSure-RNA Room Temperature Stability After 5 Days Post Collection



HemaSure-RNA Room Temperature Stability After 8 Days Post Collection



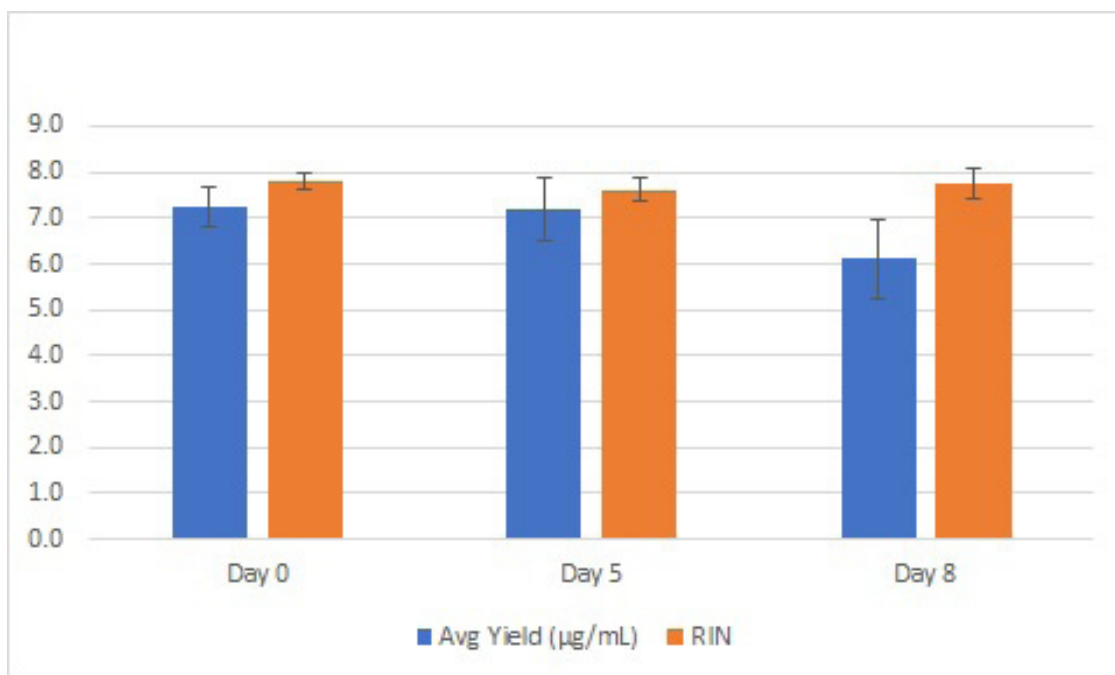
All RNA Extraction was performed with Biochain Whole Blood RNA Extraction Kit (cat. no. K1012050) and analyzed with Agilent RNA 6000 Nano kit

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Stable RNA from Whole Blood with High Yields and Integrity up to 8 Days at Room Temperature

RNA Yield and Quality from HemaSure-RNA



Ordering Information

HemaSure-OMICS-3	HemaSure-OMICs Blood Stabilization Direct Draw Tube, 3ml
HemaSure-OMICS-6	HemaSure-OMICs Blood Stabilization Direct Draw Tube, 6ml
HemaSure-OMICS-9	HemaSure-OMICs Blood Stabilization Direct Draw Tube, 9ml
HemaSure-OMICS-250	HemaSure-OMICs Blood Stabilization Microtainer, 250µl