HemaSure™-OMICs

Human gDNA, cfDNA, & RNA 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, gDNA, and RNA from the same sample. Collected cells are maintained intact, making them suitable also for FACS analysis.

Current blood stabilization technologies can contain hazardous formaldehyde or formaldehyde-like fixatives that stabilize cfDNA or gDNA or RNA but not all three from the same sample. Another drawback is that the stabilized cfDNA usually co-purifies with Human gDNA, making it more difficult to analyze. Additionally, the maximum shelf life of stabilized RNA is no more than 72 hrs.

RNA is a crucial tool in advancing our understanding of health and disease in humans and animals, but it is fragile and degrades quickly as soon the cells leave the body, as when blood is drawn. 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.

Commercially available whole blood collection tubes for RNA stabilization have limitations:

LIMITED VOLUME
of volume collection (less than 3 mL)

DESTABILIZES QUICKLY
max 72 hrs of stability at 15° – 25° C

COMPLEX PROCEDURES
for extracting RNA are not user-friendly

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
- ✓ **STABILIZES MULTIPLE STRUCTURES SIMULTANEOUSLY**: cfDNA (up to 14 days), gDNA (up to 8 days), and RNA (up to 8 days) are stabilized at room temperature in the same blood tube (15° – 30°C)
- ✓ **MULTIPLE SIZES** available: 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
- ✓ **WIDELY COMPATIBLE** with any commercially available manual or automation-enabled kits for purification of cfDNA and gDNA from whole blood. Please contact us for recommended RNA extraction protocols.

REF /Catalog Number	Product Family Name	Stabilizing Buffer
HemaSure-OMICs-3	HemaSure-OMICs Blood Stabilization Diret Draw Device	3.0 mL x 50 Units
HemaSure-OMICs-6	HemaSure-OMICs Blood Stabilization Diret Draw Device	6.0 mL x 50 Units
HemaSure-OMICs-9	HemaSure-OMICs Blood Stabilization Diret Draw Device	9.0 mL x 50 Units

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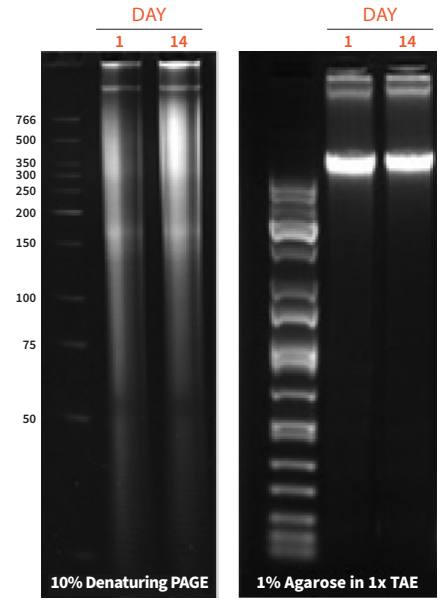
*The products shown contain the CE Mark and are approved for IVD use in countries recognizing this standard. In the USA, products are designated For Research Use Only and not for use in diagnostic procedures and will be labeled accordingly.

High Human gDNA and cfDNA Integrity 14 Days Post-Collection



Qubit Analysis

	Plasma DNA (ng)
Day 1	23
Day 14	24

qPCR Analysis (Alu gene-specific primer)

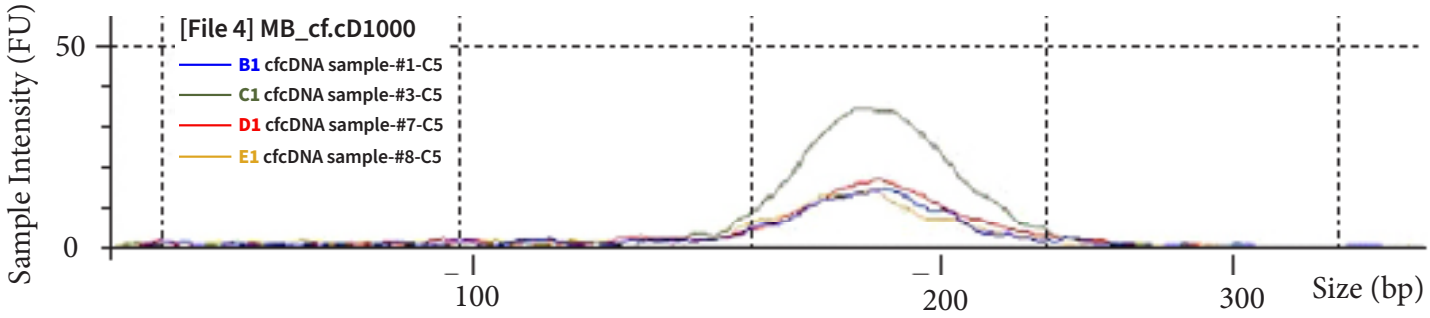
	cfDNA (ng)
Day 1	20.8
Day 14	22

gDNA Concentration (ng/µl)

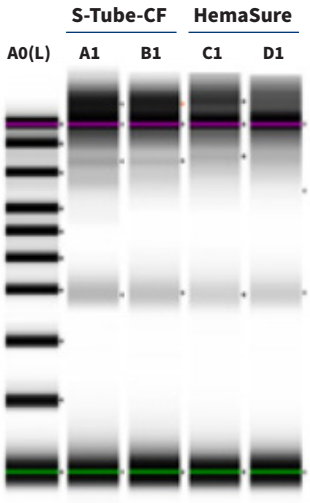
	Qubit	NanoDrop
Day 1	23	22.4
Day 14	19.5	21.1

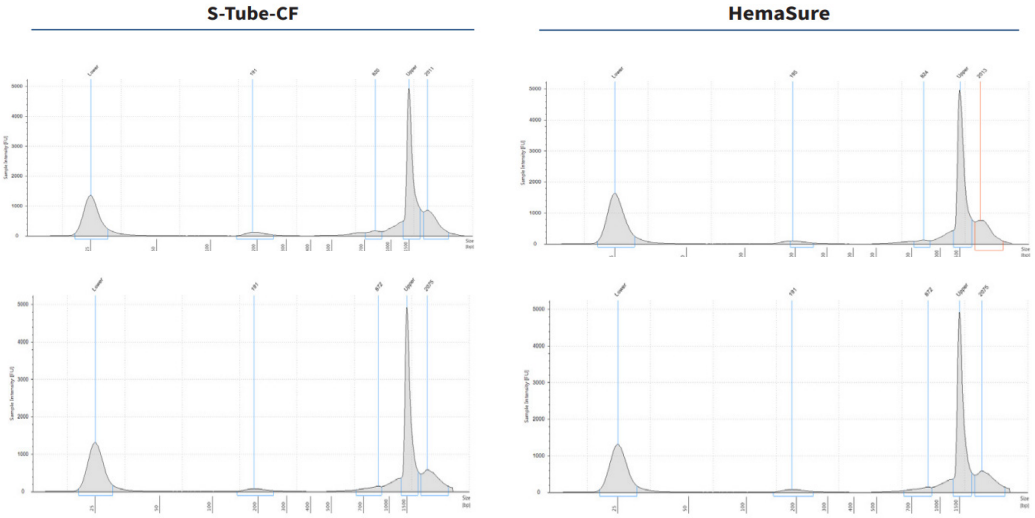
HemaSure-9 blood draw incubated for 14 days at room temperature. Plasma was separated, then DNA was extracted from 1 mL of collected plasma from healthy control using QIAamp circulating NA kit (150 µL elution). Two time points were tested: Day 1 and Day 14. The extracted plasma DNA was analyzed using 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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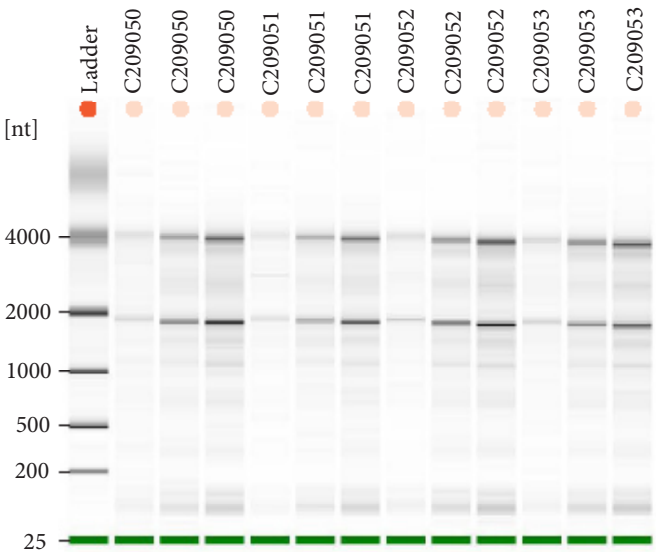
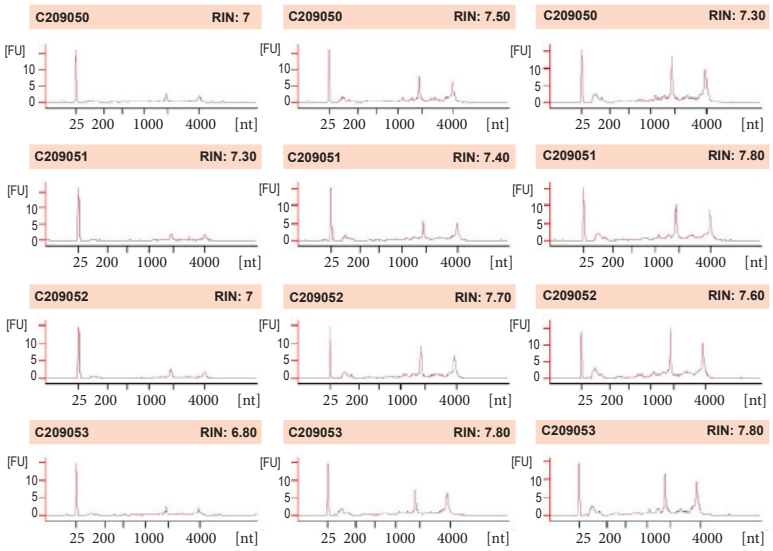
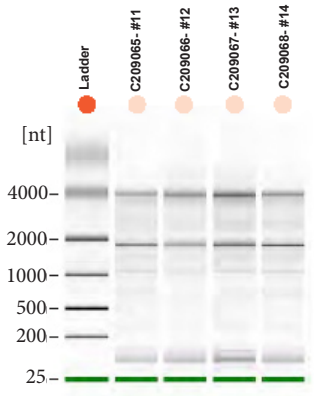
All RNA Species Equally Stabilized and Purified Including MicroRNA

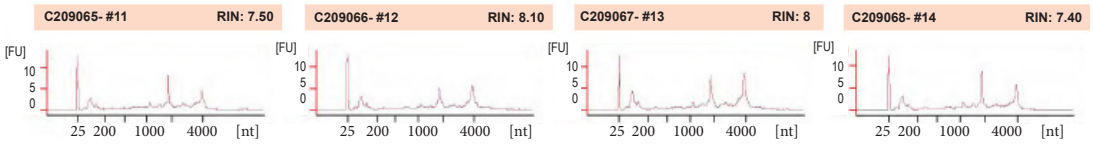
HemaSure-RNA Room Temperature Stability 5 Days Post-Collection





HemaSure-RNA Room Temperature Stability 8 Days Post-Collection

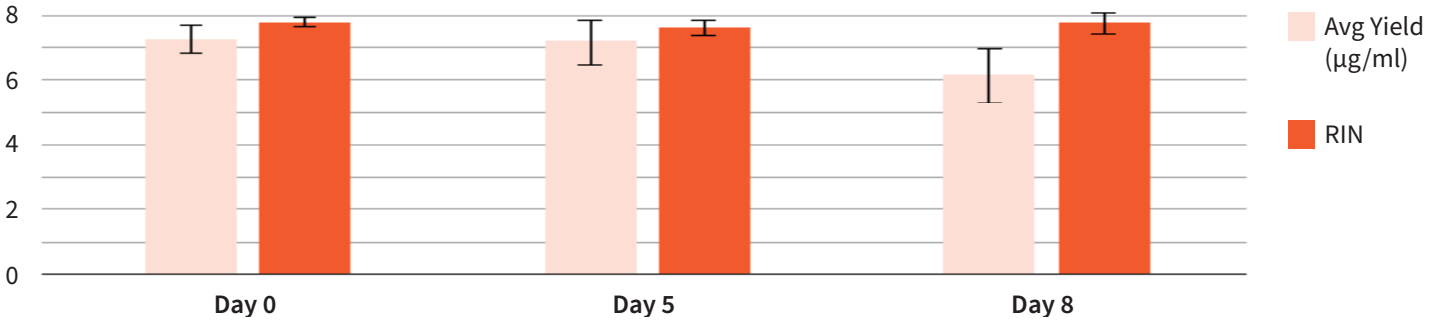




All RNA Extraction was performed with Biochain Whole Blood RNA Extraction Kit (cat. no. K1012050) and analyzed with Agilent RNA 6000 Nano kit

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

RNA Yield and Quality from HemaSure-RNA



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