AI-Enabled Point-of-Care Blood Testing Platform Featuring CBC Delivers Central Laboratory Quality Results with a Single Lithium Heparin Sample

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Truvian's Benchtop Blood Testing Solution Delivers Central Laboratory Quality Results with a Single Sample Type

Truvian's fully-automated blood testing platform, currently in late-stage development, delivers central laboratory quality results for clinical chemistry, immunoassay, and hematology tests simultaneously. Requiring just **300 µL whole blood** from a **single lithium heparin** sample, the TruWellness Panel[™] reports **30+** of the most frequently ordered routine blood tests in **<30 minutes** including a Complete Blood Count with differential (CBC), comprehensive metabolic panel (CMP), Hemoglobin A1c (HbA1c), Lipid Panel, and Thyroid Stimulating Hormone (TSH).

To enable this unprecedented innovation, Truvian developed a lithium heparin blood compatible **CBC test** using proprietary chemistry and artificial intelligence (AI) that can compute both 3-part and 5-part WBC differential analyses.

This poster summarizes the development and performance of our AI-enhanced digital pathology module which integrates computer vision (CV) with machine learning (ML), specifically deep learning algorithms for onboard CBC and WBC-differential analyses.



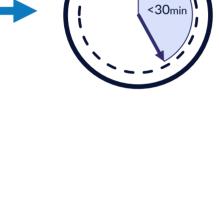
Capillary Sample Venipunctur

Step 1 Collect 300µL samp (Lithium-Heparin



Add Sample to Single-Use Test Kit

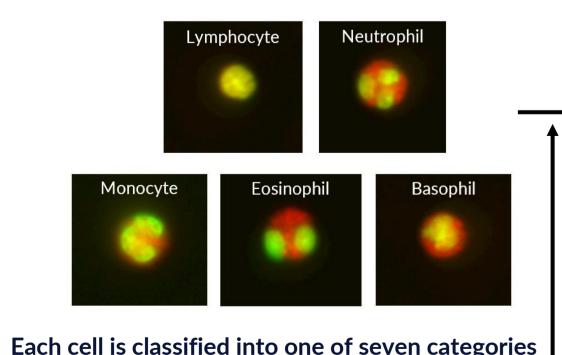
Step 3: Load Test Kit into instrument



Step 4: Run Panel (15-30 Min epends on panel size

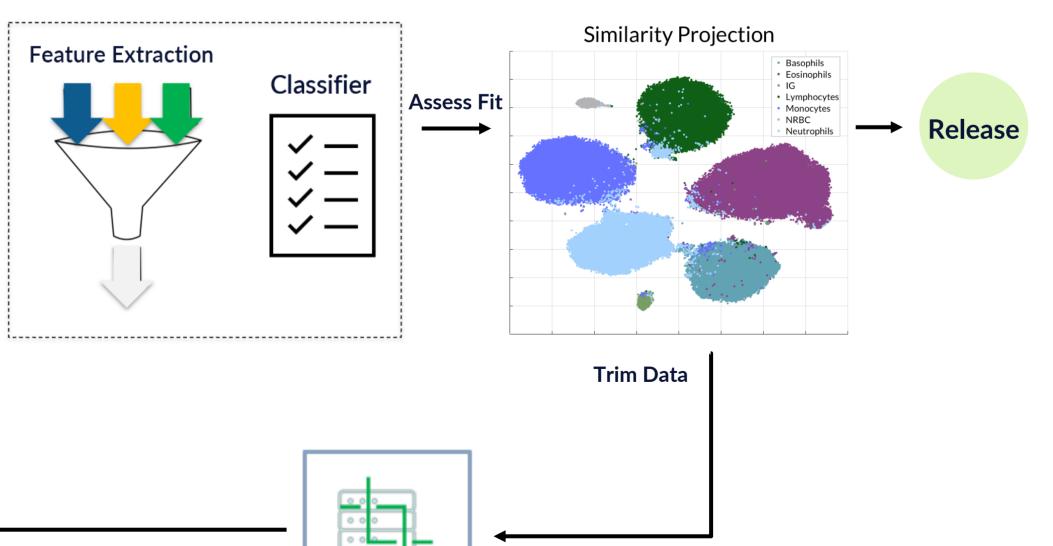
Algorithm Integrates Computer Vision with Deep Learning to Identify Cell Types for Differential in CBC

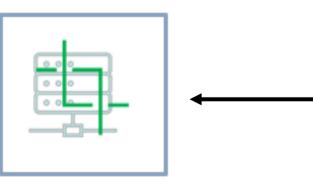
1. Label training dataset



to train a deep learning model: Neutrophil, Lymphocyte, Monocyte, Eosinophil, Basophil, immature granulocytes (IG) and nucleated red blood cells (NRBCs) to train a deep learning model

2. Build & refine model





- Each version of the algorithm was strictly evaluated for performance with test data
- Data augmentation techniques were used to improve model invariance and reduce overfitting
- Algorithm consolidates Monocytes, Basophils, and Eosinophils as the 'Others' category to provide a 3-part differential result
- CBC with a 5-part differential is scheduled for a future clinical study

🔆 truvian	TripleModTRUPatient Patient Report			
Sample ID: MPLTRU013 Date of Birth: 01/02/1991 Run Date: 11/10/2023 10:00	Sec Ma IAM Facting: No			
TEST	RESULT	FLAG	UNITS	REFERENCE INTERVAL
CBC With Differential				
WBC	5.8		x 10 ³ cells/µL	4.0 - 10.0
RBC	5.13		x 10 ⁶ cells/µL	4.50-6.00
Hemoglobin	14.9		g/dL	13.5 - 17.5
Hematocrit	44.8		%	40.5 - 52.5
MCV	87		ñ.	79 - 99
мсн	29.0		pg	26.0-33.0
MCHC	33.2		g/dL	32.0 - 36.0
Platelets	202		x 10 ⁸ cells/µL	150 - 450
Neutrophils	65.4		%	Not Established
Lymphocytes	28.6		%	Not Established
Other	5.0		%	Not Established
Neutrophils (Absolute)	3.8		x 10 ⁸ cells/µL	1.5 - 6.5
Lymphocytes (Absolute) Other (Absolute)	1.7		x 10 ³ cells/µL x 10 ³ cells/µL	0.9-3.1
Comprehensive Metabolic Panel	160	High	mg/dl.	70-99
BUN	13		mg/dl	8-24
Creatinine	1.04		mg/dL	0.70 - 1.25
eGFR	00		mL/min/1.73 m ²	>50
Calcium	9.1		mg/dL	8.6-10.2
Protein, Total	7.5		g/dL	8.0 - 8.3
Albumin	4.5		g/dL	3.5-5.0
Bilirubin, Total	0.37		mg/dL	0.20 - 1.20
Alkaline Phosphatase	64		U/L	40 - 130
AST	20		U/L	<40
ALT	35		U/L	<45
Lipid Panel				
 Cholesterol, Total 	266	High	mg/dL	<200
Triglycerides	137		mg/dL	<150
HDL Cholesterol	39		mg/dL	>30
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Consult your physician about your result O 2023 Truvian Health. All Hights Reser				Page Tof

Step 5: **Results Reported**

3. Deploy model

CBC Results are Precise Across Medical Decision Levels

Precision Study :

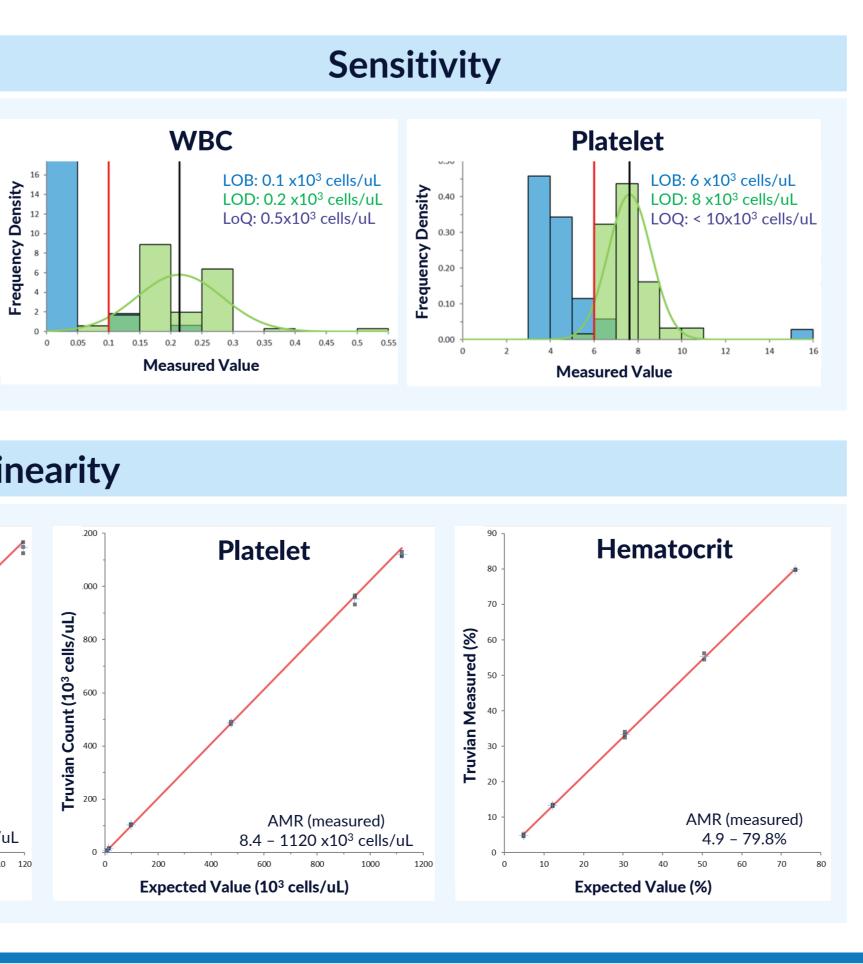
2210 test results from 65 total runs across 5 instruments with 3 levels of control material chemistry and immunoassay tests

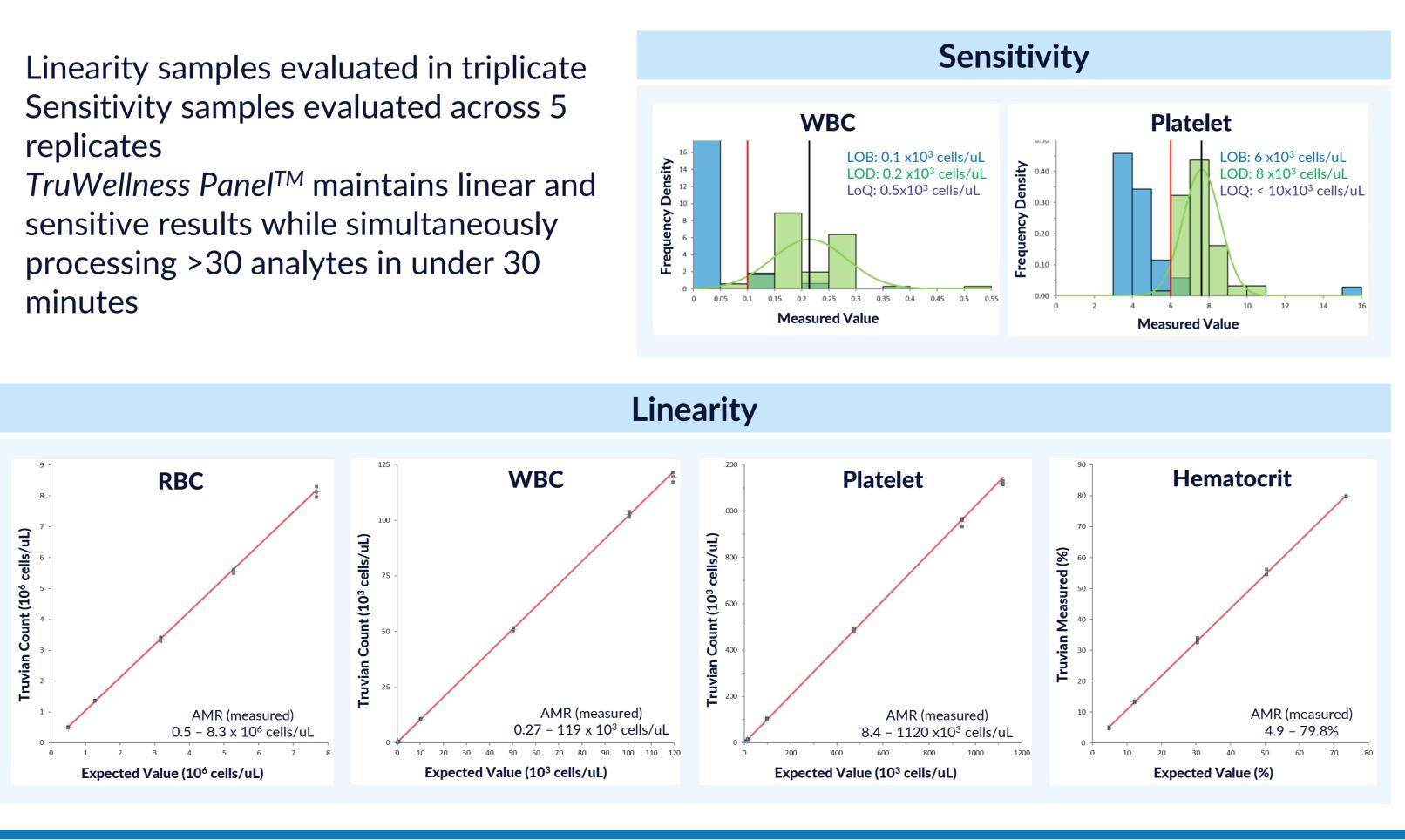
Complete Blood Count on TruWellness Panel™

				l											
CBC			CBC			Comprehensive Metabolic Panel			Lipid Panel						
Measurand	Level	Mean	CV (%)	Measurand	Level	Mean	CV (%)	Measurand	Level		CV (%)	Measurand	Level	Mean	CV (%)
RBC (10 ⁶ cells/µL)	Low Normal High	4.40	2.5 2.4 2.9	WBC (10 ³ cells/µL)	Low Normal High	2.7 8.0 19.0	6.2 3.5 2.3	Glucose (mg/dL) BUN	Low Normal High Low	57 115 352 13	3.8 2.5 1.4 3.9	Chol (mg/dL)	Low Normal High Low	93 167 249 91	5.2 3.4 2.5 2.0
PLT (10 ³ cells/μL)	Low Normal High	78	5.7 2.3 2.4	NEUT %	Low Normal High	62.1 63.5 79.5	4.9 3.2 1.2	(mg/dL) CRE	Normal High Low Normal	37 67 0.84 1.76	4.6 4.3 3.3 1.7	Trig (mg/dL) HDL	Normal High Low	129 189 15	1.6 1.2 10.9
HGB (g/dL)	Low Normal	6.1 13.5	2.9 1.2	LYM %	Low Normal	23.0 23.7	13.9 8.5	(mg/dL) Calcium	High Low Normal	5.95 6.4 10.9	0.9 4.1 3.5	(mg/dL)	Normal High Low	44 74 77	7.5 6.0 4.5
HCT	High Low	15.6 17.7 38.1	1.5 2.2 1.3	OWBC%	High Low	14.5 14.9 12.8	5.7 11.1	(mg/dL) Total Protein	High Low Normal	13.5 4.0 5.6	2.2 2.9 2.9	(mg/dL)	Normal High Low	122 175 18.1	3.1 2.5 1.9
(%)	High 43.9 1.6	1.6	OVVBC/0	Normal High	6.0	8.6 10.8	(g/dL)	High	6.6 2.7	2.1 2.6	VLDL (mg/dL)	Normal High		2.0 1.6	
MCV (fL)	Low Normal High	80.3 86.7 88.8	2.7 2.6 2.3	NEUT (10 ³ cells/µL)	Low Normal High	1.6 5.1 15.1	4.5 4.8 2.7	ALB (mg/dL) TBIL	Normal High Low	3.7 4.6 0.53	2.1 2.3 5.9	LDL (mg/dL)	Low Normal High	59.2	5.6 3.7 3.1
MCH (pg)	Low Normal High	27.5 30.7 31.6	3.4 2.5 2.1	LYM (10 ³ cells/µL)	Low Normal High	0.6 1.9 2.7	17.2 10.2 6.6	(mg/dL) ALP	Normal High Low Normal	3.18 7.67 27 117	2.4 1.5 14.2 5.3	Chol/HDL (ratio)	Low Normal High	6.1	7.0 5.5 4.7
MCHC (g/dL)	Low Normal High	34.2	3.1 1.6 2.2	OWBC (10 ³ cells/µL)	Low Normal High	0.4 1.0 1.2	14.2 7.5 10.9	(U/L) AST (U/L)	High Low Normal High	234 44 106 244	3.5 2.3 2.3 1.7	Thy Measurand	roid & H Level Low		CV (%) 7.2
								ALT (U/L)	Low Normal High	29 79 168	5.2 2.5 1.8	(IIIIO/L)	Normal High Low		4.6 5.3 2.7
												HbA1c (%)	Normal High	6.2 6.6	1.5 1.0

Linearity and Sensitivity Achieved Across Clinically Relevant Ranges

- Linearity samples evaluated in triplicate
- replicates
- sensitive results while simultaneously processing >30 analytes in under 30 minutes





• Truvian's benchtop system demonstrates robust and reliable performance for both CBC and other

Rest of TruWellness Panel™

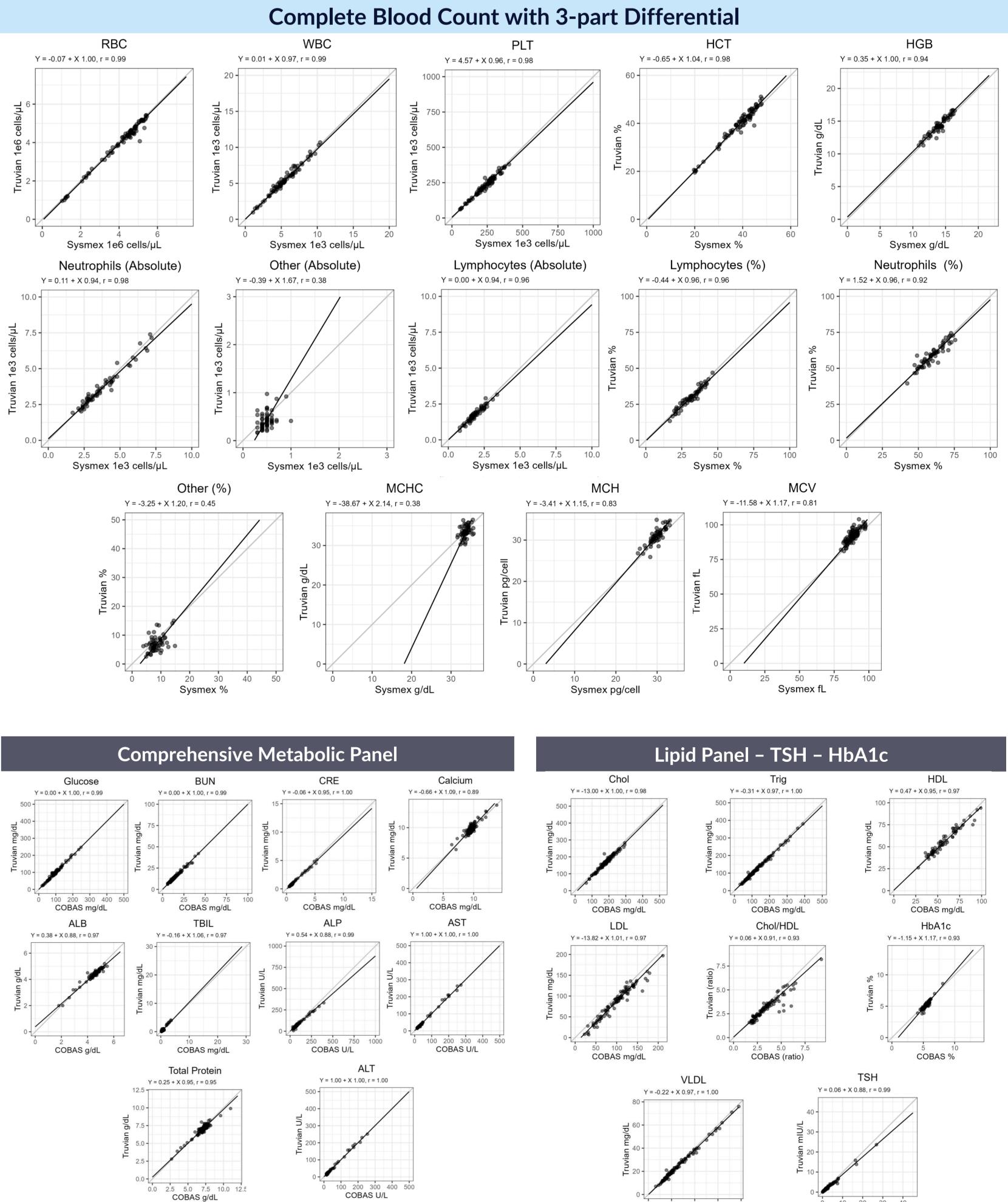
High

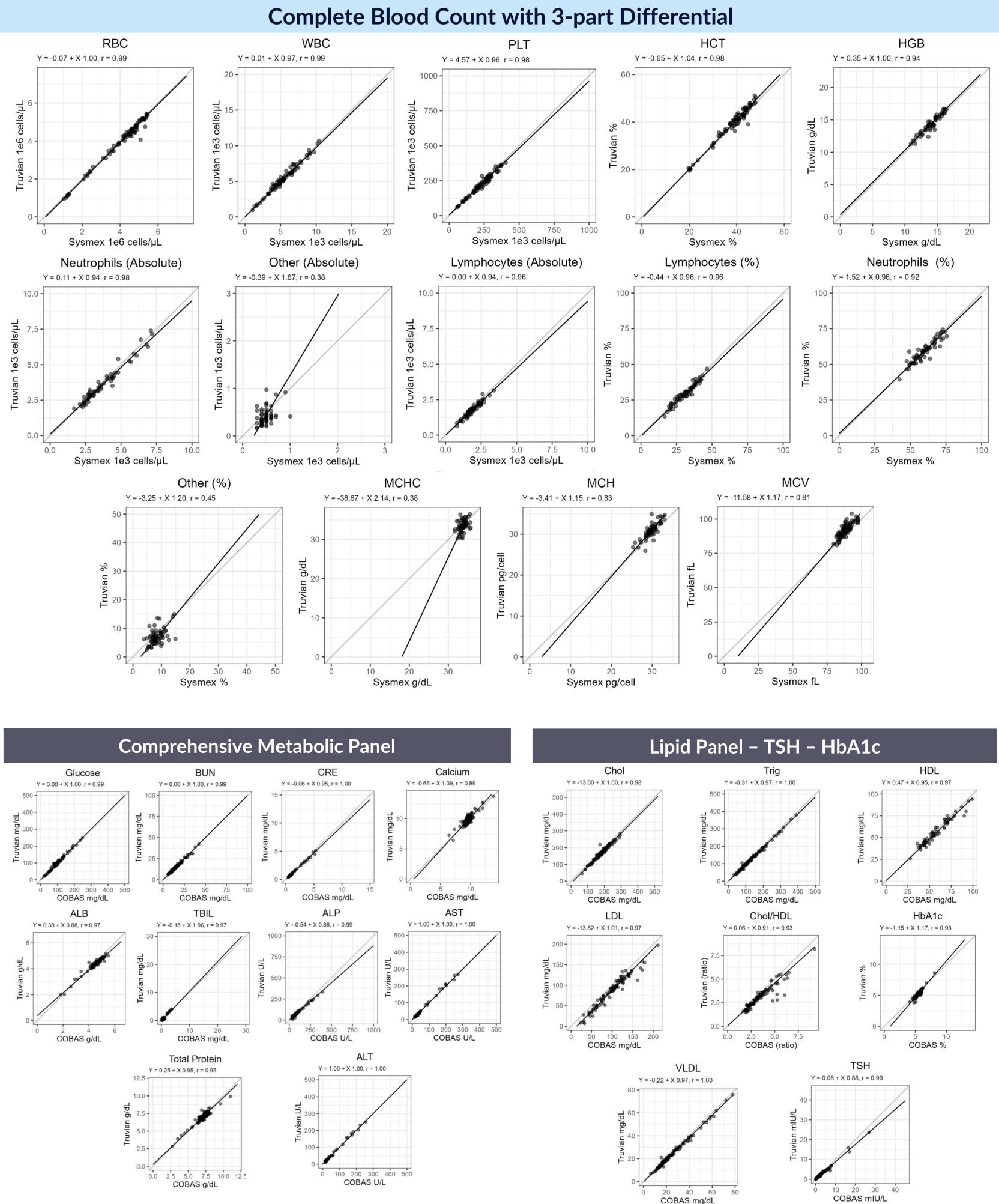
6.6 1.0

Truvian Results are Concordant with Central Lab Testing using Lithium-Heparin Sample

Method Comparison Study:

- measuring range for all tests





truvian

• Matched samples from 118 donors run on Truvian platform vs central laboratory analyzers • Lithium heparin samples were run across 7 Truvian instruments

• Regression analysis was used to determine concordance for each assay

• Truvian's benchtop system is concordant with central laboratory analyzers • Performance of Truvian CBC using Lithium heparin blood concordant to EDTA blood on Sysmex • Ongoing studies will include hematology pathologic samples to ensure coverage across the full