

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

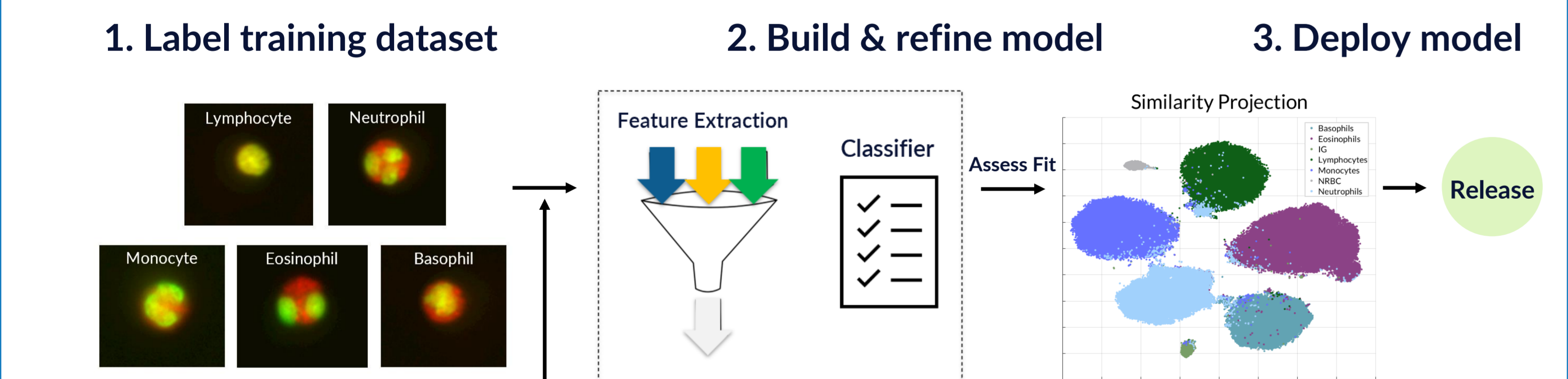
Truvian's fully-automated blood testing platform, currently in late-stage development, delivers central laboratory quality results for clinical chemistry, immunoassay, and hematology tests simultaneously. Requiring just **300 µL whole blood** from a **single lithium heparin** sample, the TruWellness 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.



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



Each cell is classified into one of seven categories 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

- 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

CBC Results are Precise Across Medical Decision Levels

Precision Study :

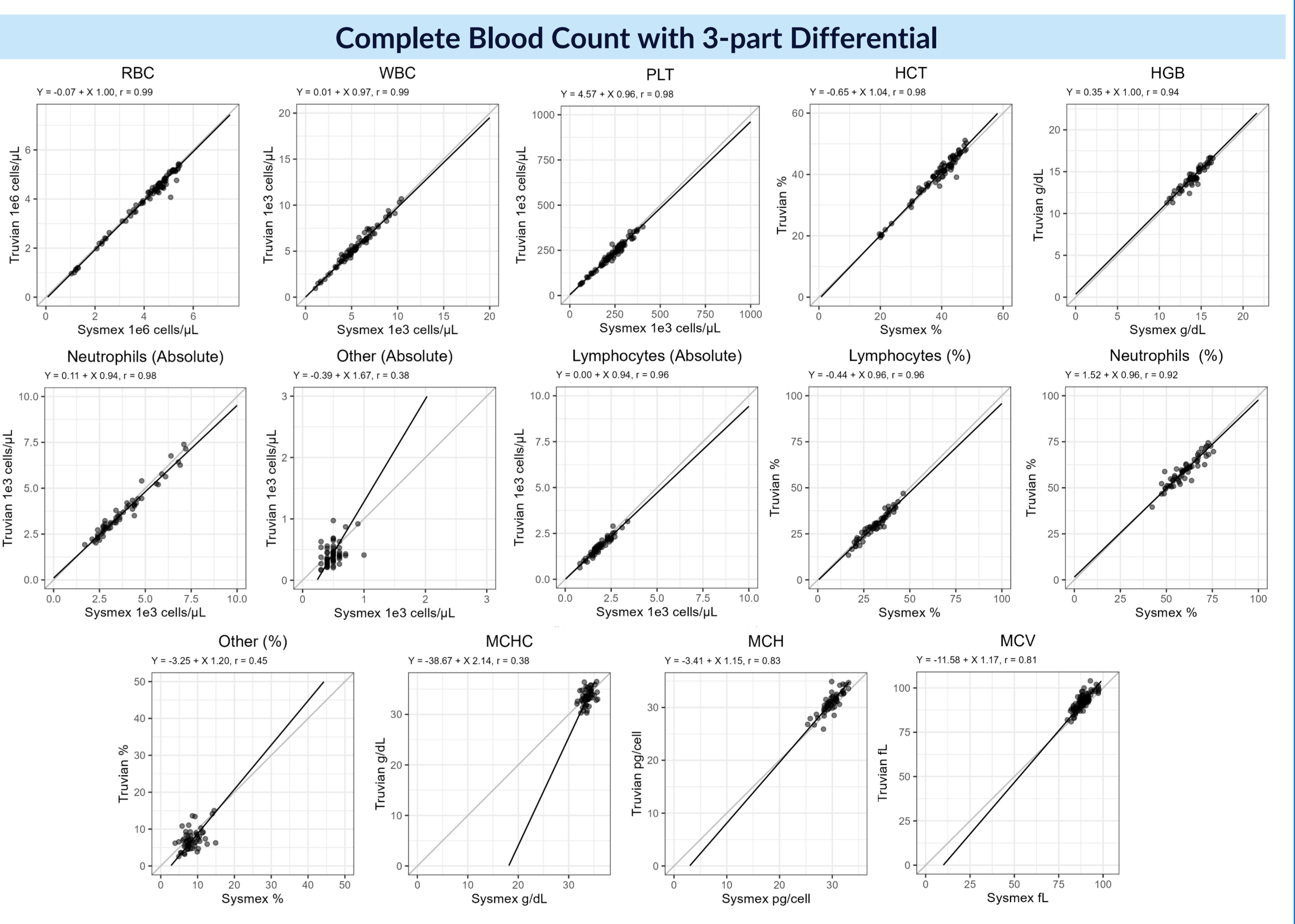
- 2210 test results from 65 total runs across 5 instruments with 3 levels of control material
- Truvian's benchtop system demonstrates robust and reliable performance for both CBC and other chemistry and immunoassay tests

Complete Blood Count on TruWellness Panel™				Rest of TruWellness Panel™									
CBC		CBC		Comprehensive Metabolic Panel		Lipid Panel							
Measurand	Level	Mean CV (%)	Measurand	Level	Mean CV (%)	Measurand	Level	Mean CV (%)					
RBC (10 ⁶ cells/µL)	Low	4.40	2.5	WBC (10 ³ cells/µL)	Low	2.7	6.2	Glucose (mg/dL)	Low	57	3.8		
	Normal	4.94	2.4		Normal	115	2.5		Normal	115	2.5		
	High	6.08	2.9		High	352	1.4		High	352	1.4		
PLT (10 ³ cells/µL)	Low	78	5.7	NEUT %	Low	62.1	4.9	BUN (mg/dL)	Low	13	3.9		
	Normal	262	2.3		Normal	67	4.6		Normal	37	4.6		
	High	548	2.4		High	0.84	3.3		High	67	4.3		
HGB (g/dL)	Low	6.1	2.9	LYM %	Low	23.0	13.9	CRE (mg/dL)	Normal	1.76	1.7		
	Normal	13.5	1.2		Normal	5.95	0.9		Low	0.84	3.3		
	High	15.6	1.5		High	6.4	4.1		High	5.95	0.9		
HCT (%)	Low	17.7	2.2	OWBC%	Low	14.9	11.1	Calcium (mg/dL)	Normal	10.9	3.5		
	Normal	38.1	1.3		Normal	12.8	8.6		Low	10.9	3.5		
	High	43.9	1.6		High	14.5	5.7		High	13.5	2.2		
MCV (fL)	Low	80.3	2.7	NEUT (10 ³ cells/µL)	Low	1.6	4.5	Total Protein (g/dL)	Normal	5.6	2.9		
	Normal	86.7	2.6		Normal	5.1	4.8		Low	2.7	2.6		
	High	88.8	2.3		High	15.1	2.7		High	6.6	2.1		
MCH (pg)	Low	27.5	3.4	LYM (10 ³ cells/µL)	Low	0.6	17.2	ALB (mg/dL)	Normal	3.7	2.1		
	Normal	30.7	2.5		Normal	1.9	10.2		Low	0.53	5.9		
	High	31.6	2.1		High	2.7	6.6		High	4.6	2.3		
MCHC (g/dL)	Low	34.2	3.1	OWBC (10 ³ cells/µL)	Low	0.4	14.2	TBIL (mg/dL)	Normal	3.18	2.4		
	Normal	35.5	1.6		Normal	1.0	7.5		Low	0.76	1.5		
	High	35.7	2.2		High	1.2	10.9		High	27	14.2		
								Thyroid & HbA1c					
								Measurand		Level		Mean CV (%)	
								TSH (mIU/L)		Low		1.2	
								HbA1c (%)		Normal		3.9	
										High		10.0	
										Low		6.0	
										High		6.2	
										High		6.6	
										High		1.0	

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

Method Comparison Study:

- 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 measuring range for all tests



Linearity and Sensitivity Achieved Across Clinically Relevant Ranges

- Linearity samples evaluated in triplicate
- Sensitivity samples evaluated across 5 replicates
- TruWellness Panel™ maintains linear and sensitive results while simultaneously processing >30 analytes in under 30 minutes

