To: 'Chung, Kevin K LTC USA JC2RT'[kevin.k.chung@afghan.swa.army.mil]
Cc: Elizabeth Holmes[eholmes@theranos.com]
From: Daniel Edlin
Sent: Thur 3/8/2012 9:18:01 PM
Importance: High
Subject: RE: JCIDS (UNCLASSIFIED)
Received: Thur 3/8/2012 9:18:03 PM
DoD_Briefing_03_08_2012 - CONFIDENTIAL.pdf

Dr. Chung,

Please use the attached PDF briefing for your presentation, and kindly delete the PowerPoint slides we sent you for confidentiality purposes. I meant to send you this briefing as a PDF.
If you ever need a raw document from us please let us know and we can go through the approval process to get it for you.
My apologies for the confusion, and please let us know if you have any questions.

Best regards,
Dan

-----Original Message-----
From: Daniel Edlin
Sent: Thursday, March 08, 2012 12:00 PM
To: 'Chung, Kevin K LTC USA JC2RT'
Cc: Elizabeth Holmes
Subject: RE: JCIDS (UNCLASSIFIED)

Dr. Chung,

Please find the attached slides along with an overview document on Theranos for your reference. Please let us know if we can provide anything else; we will be available late tonight to support your presentation tomorrow.
Note that we have never before sent these slides to anyone given the content is highly confidential as we prepare to broadly launch in the US commercial market this year. We appreciate all your support as always in maintaining the privacy of these documents on a need to know basis.

We look forward to our next conversation.

Best regards,
Dan

-----Original Message-----
From: Chung, Kevin K LTC USA JC2RT [mailto:kevin.k.chung@afghan.swa.army.mil]
Sent: Wednesday, March 07, 2012 10:51 PM
To: Elizabeth Holmes
Cc: Daniel Edlin
Subject: RE: JCIDS (UNCLASSIFIED)

Excellent. Thanks.

-----Original Message-----
From: Elizabeth Holmes [mailto:eholmes@theranos.com]
Sent: Thursday, March 08, 2012 11:20 AM
To: Chung, Kevin K LTC USA JC2RT
Cc: Daniel Edlin
Subject: RE: JCIDS (UNCLASSIFIED)

I reviewed this today - you will have it tonight or at the latest early tomorrow AM PST.

From: Chung, Kevin K LTC USA JC2RT [kevin.k.chung@afghan.swa.army.mil]
Sent: Wednesday, March 07, 2012 8:13 PM
To: Elizabeth Holmes

Subject: RE: JCIDS (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: FOUO

My briefing is tomorrow morning...in 26 hours.

Please send me what you have.

Kevin

-----Original Message-----
From: Elizabeth Holmes [mailto:eholmes@theranos.com]
Sent: Wednesday, March 07, 2012 8:37 AM
To: Chung, Kevin K LTC USA JC2RT
Subject: RE: JCIDS

We'll include that,

-----Original Message-----
From: Chung, Kevin K LTC USA JC2RT
[mailto:kevin.k.chung@afghan.swa.army.mil]
Sent: Tuesday, March 06, 2012 8:04 PM
To: Elizabeth Holmes
Subject: RE: JCIDS

Oh and if you have a slide on IT requirements that would be very helpful.

K

-----Original Message-----
From: Elizabeth Holmes [mailto:eholmes@theranos.com]
Sent: Wednesday, March 07, 2012 8:22 AM
To: Chung, Kevin K LTC USA JC2RT
Subject: RE: JCIDS

Yes ... when is it and what is your area of focus

-----Original Message-----
From: Chung, Kevin K LTC USA JC2RT
[mailto:kevin.k.chung@afghan.swa.army.mil]
Sent: Tuesday, March 06, 2012 7:50 PM
To: Elizabeth Holmes
Subject: RE: JCIDS

Do you happen to have a short slide set I can use for my presentation to TF MED?

Thanks,

Kevin

-----Original Message-----
From: Elizabeth Holmes [mailto:eholmes@theranos.com]
Sent: Tuesday, March 06, 2012 9:35 AM
To: Chung, Kevin K LTC USA JC2RT
Subject: RE: JCIDS

Yes - that is fine. This is our complete CLIA lab test library.

Let me know if there is any other information from us that is of value for your meetings,

Talk to you soon,

Elizabeth.

-----Original Message-----
From: Chung, Kevin K LTC USA JC2RT
[mailto:kevin.k.chung@afghan.swa.army.mil]
Sent: Monday, March 05, 2012 10:13 AM
To: Elizabeth Holmes
Subject: RE: JCIDS

Thanks. Can I share this with our CLINOPS guy? He is the last person I need to convince in theater.

Kevin

-----Original Message-----
From: Elizabeth Holmes [mailto:eholmes@theranos.com]
Sent: Monday, March 05, 2012 10:15 AM
To: Chung, Kevin K LTC USA JC2RT
Subject: RE: JCIDS

Kevin.

Please see attached.

Let me know if there are any other questions we can help answer,

Elizabeth.

-----Original Message-----
From: Chung, Kevin K LTC USA JC2RT
[mailto:kevin.k.chung@afghan.swa.army.mil]
Sent: Tuesday, February 28, 2012 10:07 PM
To: Elizabeth Holmes
Subject: RE: JCIDS

Elizabeth,

Do you have an updated users guide with list of available analytes you can send me?

Briefing some folks next week.

Thanks,

Kevin

From: Elizabeth Holmes [mailto:eholmes@theranos.com]
Sent: Sat 2/25/2012 1:12 AM
To: Edgar, Erin P COL MIL USA USCENTCOM CCSG-A; Chung, Kevin K LTC USA JC2RT
Cc: Huntsinger, Charles R Mr CIV USAF USCENTCOM CCSG-AXO; Murphy, Christine L Maj MIL USAF USCENTCOM CCSG-AA; Haddad, Sam E JR LTC MIL USA USCENTCOM CCJ4-O-LRC
Subject: RE: JCIDS

Thanks Colonel Edgar.

We will review this in parallel with our people today,

Elizabeth.

From: Edgar, Erin P COL MIL USA USCENTCOM CCSG-A [mailto:erin.edgar@centcom.mil]
Sent: Friday, February 24, 2012 12:23 PM
To: Elizabeth Holmes; Chung, Kevin K LTC USA JC2RT
Cc: Huntsinger, Charles R Mr CIV USAF USCENTCOM CCSG-AXO; Murphy, Christine L Maj MIL USAF USCENTCOM CCSG-AA; Haddad, Sam E JR LTC MIL USA USCENTCOM CCJ4-O-LRC
Subject: JCIDS

Team,

Lots of acronyms thrown out in this morning's TELCON w/ the lab consultants, Tricare Management Activity, Medical Research and Materiel Command, and us. JCIDS is the Joint Capabilities Integration Development System. Attached is a new manual that describes it briefly.
We just finished a mtng w/ the J8 Science and Technology guys, and they think that a JEON would be the appropriate vehicle for this (Joint Emerging Operational Need). UON/JUON/JEON do NOT require ICDs and CCDs, but they'll eventually require some sweat and paperwork if they are to be sustained.

I see us in two parallel Lines of Effort: 1) Get a couple of analyzers to BAF ASAP for proof of concept testing and see how they plug into our IT system. We are trying to piggy-back onto the USASOC contract w/ MSG Sims so we don't have to start from scratch. 2) Develop a JEON and have Gen Mattis send notes of support to the CGs at AMEDD center and School and MRMC.

-E

Classification: UNCLASSIFIED
Caveats: FOUO

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Confidential Briefing

US Department of Defense

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Theranos, Inc.

Theranos is a Silicon Valley-based healthcare technology company founded in 2003.

- Theranos' proprietary, patented technology runs comprehensive blood tests from a finger-stick and tests from micro-samples of other matrices in real-time outside of traditional lab settings and generates significantly higher integrity data than currently possible.
- Our current and past clients include 10 of the top 15 major pharmaceutical companies, midsized bio-pharmas, prominent research institutions, healthcare payors, and U.S. and foreign government health and military organizations.
- Theranos is now launching Theranos Systems to providers nationally.

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About Theranos

Founder and CEO **Elizabeth Holmes** left Stanford University to start Theranos around her patents for next-generation healthcare systems, building the company from inception to rapid commercial growth today.

President & COO **Sunny Balwani** joined Theranos from the graduate studies program in Computer Science at Stanford University after successfully selling his previous company for over $400M.

Theranos' investors and board members include, amongst others:

- **Larry Ellison**, Founder and CEO of Oracle Corporation
- **George P. Shultz**, former U.S. Secretary of State, U.S. Secretary of Labor, U.S. Secretary of the Treasury, Director of OMB, Dean of the University of Chicago Graduate School of Business, and President of Bechtel
- **Bob Shapiro**, former CEO and Chairman of Monsanto and Pharmacia Corporations (now Pfizer); former director of NYSE, Citibank, and other major corporations
- **Donald L. Lucas**, the first venture capitalist in Silicon Valley, and a legend behind many of today's Fortune 500 companies

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CMS CLIA Accreditation

Theranos is certified as a High Complexity CLIA Laboratory

Clinical Laboratory Improvement Amendment of 1988

- CLIA regulates all testing on humans for health purposes using quality standards
  - The more complex the test, the more stringent the standards
- Ensures accurate, reliable testing regardless of location
- Administered by CDC, FDA, & CMS

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CMS CLIA Accreditation

Complexities *(as defined by CMS)*

- Waived – simple, accurate tests without routine oversight
- Moderate – most tests fall in this category; automated testing where the lab must meet standards and surveyed biennially
- PPM – provider performed microscopy; the lab must meet quality standards; no routine oversight
- High Complexity – requires the highest level of training, technique and result interpretation; most stringent standards; labs are surveyed routinely and randomly

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- Certification as a high complexity lab under CLIA
- Theranos clinical analyzers are Class I analyzers under FDA 21 CFR Parts 862-892

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CMS CLIA Accreditation

Theranos' Quality Standards Under CLIA

- Personnel qualifications & responsibilities – lab director has overall responsibility; supervision of required positions
- Quality Control (QC) – mechanism to ensure all testing procedures meet highest standards
- Specimen Integrity and Record Keeping – documentation of all test data; patient identification, confidentiality, test referrals, etc.
- Proficiency Testing (PT) – testing for accuracy and control comparisons; biennial audits of testing accuracy
- Quality Assessment (QA) – ongoing assessments; comprehensive system to monitor performance and ensure quality results

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CMS CLIA Accreditation

CLIA Surveys and Audits

- Biennial
- Performed by CMS trained State Agency Medical Technicians or approved accrediting organizations with equivalent standards (CAP)
- Outcome-oriented with QA focus
- Data indicates improved lab performance over time

Theranos maintains CLIA accreditation as a high complexity lab and has passed audits without a single deficiency to maintain this status

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Theranos Hardware

Theranos field systems' rugged, modular design with integrated communications capability and GPS enable full operability in the field

Modular Design

- Can be used in all military care facilities First Aid and Triage Shelter (Level I), Portable Surgical Centers (Level II), Field Hospitals (Level III)
- Blade design allows for customization (e.g., battery)
- Peripheral capabilities for additional biometric data collection

Integrated Communications

- Integrated communications with GPS give full operability in the field
- Can communicate via satellite, short and long-band radio, wireless communications, cellular communications, Ethernet connection
- High resolution camera allows for two-way video conferencing or teleconferencing with doctors not in the field

Range of Operability

- System has been validated to perform under a wide range of temperatures, humidity, and atmospheric pressure (elevation)

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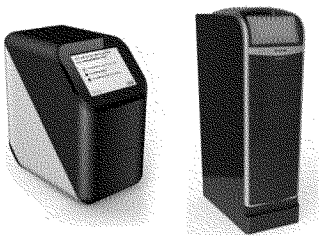
Overview: Theranos Systems

Theranos Systems

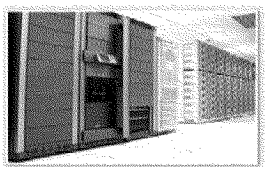


Theranos Analyzers

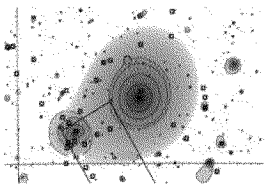
Cartridges

Mobile Applications –
e.g., the *Health Assistant*

Theranos Systems: Backend Analytical Infrastructure



Data Analysis
Infrastructure



Pattern Recognition
Algorithms

Applications
e.g., Integration, Individualized CDS,
Videoconferencing.

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Theranos Systems

- Unlike existing point of care technologies, Theranos analyzers run any test available in central laboratories
- Theranos is capable of running any combination of test within the same cartridge footprint
- Cartridges are laid out based on frequency of tests ordered and ability to run automatic "reflex" tests for follow-on test orders for out-of-range values which otherwise would require a separate sample
- Automated processing eliminates error due to "passive" point of care processing or human processing in labs
- Link to analytical system on Theranos servers facilitates intelligent sample processing and actionable decision making

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Theranos Systems Capabilities

Theranos is a fully integrated health data capture, analysis and care delivery solution enabling better diagnoses, early detection of health status, rapid intervention and improved quality of care

- ✓ Quick test turnaround and real-time access to results
- ✓ Point-of-service automated sample analysis
  - Eliminates human lab errors and sample degradation issues
- ✓ Diversified number of tests greatly expands upon current combat medical capabilities
- ✓ Automated reflex testing without the need for additional labs
- ✓ Decision support, visualization and analysis tools around individual biochemical profiles and traditional CDS guidelines
- ✓ High integrity longitudinal data
  - Allows for trend characterization over time; rates of change of biochemical data are better indicators of disease progression than static concentrations
- ✓ No/minimal setup and training time required

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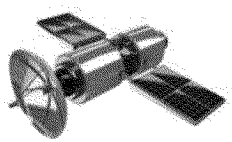
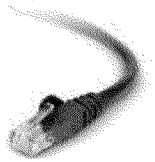
Theranos Connectivity Modes

- The Theranos System is equipped with software and hardware that enables live communication with offsite medical personnel, allowing the most qualified doctors and surgeons to assist in the stabilization, triage and initiation of treatment at the point-of-service.
- Theranos field systems' rugged, modular design with integrated communications capability and optional GPS enable full operability in the field.

- Analyzers can transmit data and video via the following methods to allow instant communication of test results to the necessary recipients:



Satellite



Ethernet

Short/long wave radio

Cellular Broadband

Wi-Fi

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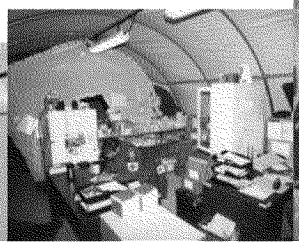
Modular Design of Theranos System

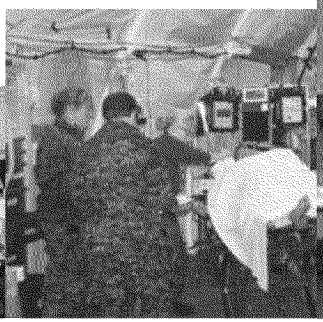
Theranos systems modular design allows for portability and deployment in all military medical care settings

Medevac

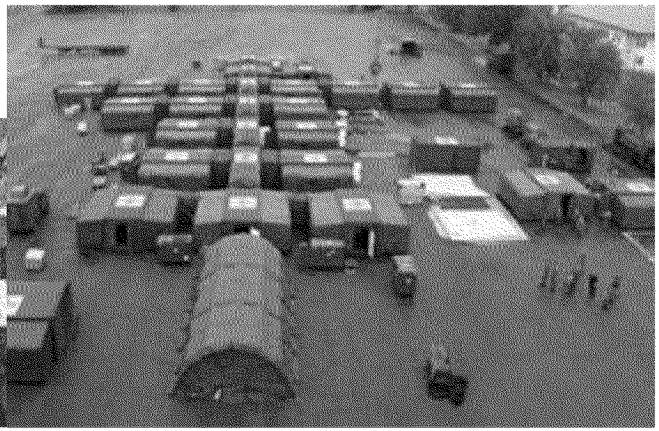
First Aid & Triage Shelter (Role I)



Portable Surgical Centers (Role II)



Field Hospitals (Role III)



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Theranos IT Infrastructure

- **Highly versatile in connectivity platform –** we have integrated GSM and CDMA cellular data cards into every analyzer with Wi-Fi connectivity. In the past our analyzer has communicated over port 8443, 22, or 443, and TCP/IP – HTTPS. However, we have the ability to configure ports based on customers' IT needs.

- **Configuration –** The analyzer communications are commonly configured via DHCP, which automatically selects IP address, subnet and gateway. Additionally, the analyzer can be customized to accept input of static IP, subnet and gateway.

- **Operating System –** We use a custom image of Windows 7P Embedded as our main OS, however, we have also used Linux in the past without any problems. We usually find Windows 7E to be more powerful and it allows us to provide more capabilities.

- **Security Policies –**Theranos is HIPAA and 21 CFT Part 11 compliant, utilizes bank-level encryption, and operates in compliance with FIPS 140.

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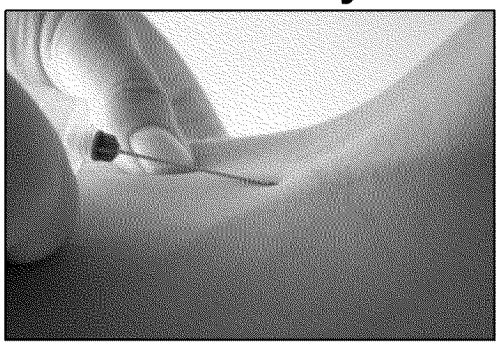
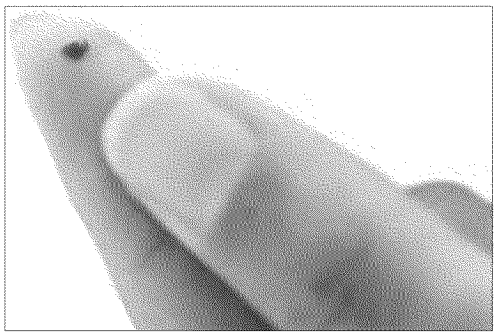
Transforming the Patient Experience

Check-In → Prep & Perform Finger Stick → Collect Biometrics → Close-Out

Lab Today



Theranos



Finger-stick tests **reduce volumes of blood draws by 99%**

Major impact on **patient experience**: pediatrics, geriatrics, oncology, etc.

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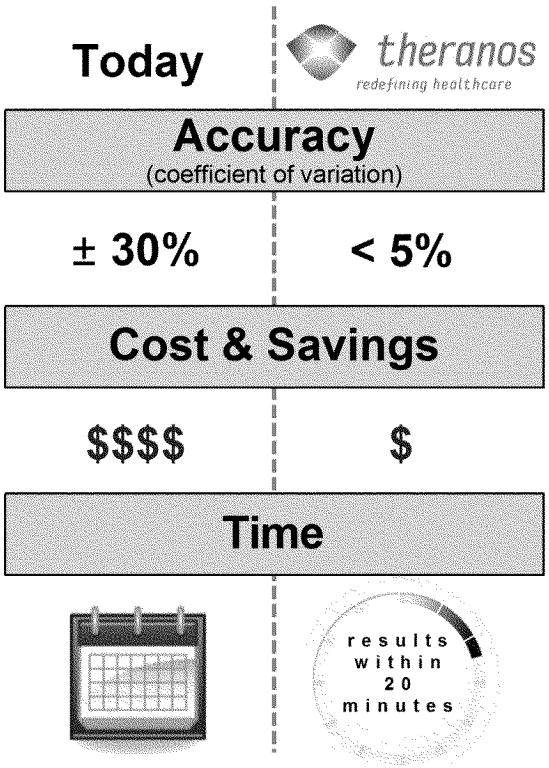
Theranos Reinvents the Clinical Laboratory



The <5% CV yielded in Theranos' analysis results from elimination of pre-analytic errors, and provides for precise and actionable information that was previously inaccessible

Theranos offers significant immediately realizable and fully loaded cost savings

Theranos has quicker test run times and communicates most results in <20 minutes

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Finger-Stick Based Testing

Routine, Specialty & Esoteric Tests

- All 2000+ currently run tests/CPT codes are available through Theranos
- Theranos runs any test available in central laboratories
- Theranos can process any sample type
- All tests match existing reimbursement codes
- With CLIA certification, Theranos is a nationally accredited provider

Higher Quality Data

- Variability among traditional labs prevents insight into:
  - Early disease onset, progression, and regression
- **The unprecedented lack of variation with Theranos yields:**
  - Higher integrity data and longitudinal trending
  - Earlier insight into the onset/progression of disease
  - Reduction in unnecessary secondary procedures from results which currently show up as false positive results

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Validation of Theranos Systems

Theranos Systems have been comprehensively validated over the course of the last seven years by ten of the fifteen largest pharmaceutical companies, with hundreds of thousands of assays processed.

After running clinical trials with Theranos Systems instead of the central laboratory, a top-five pharmaceutical company's Lab Director concluded that **"Theranos Systems eliminate the need for a lab."**

Theranos Systems are validated under FDA ICH and World Health Organization guidelines.

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Excerpts from Theranos' 2,000+ Test Menu

Bacteria

Streptococcus pneumoniae (penic R(24%),S)
Mycoplasma pneumoniae
Chlamydia pneumoniae
Bordetella pertussis
Haemophilus influenzae (ampic R,S)
Moraxella catarrhalis
Staphylococcus aureus (MR (30%), RS)
Streptococcus pyogenes (A)
Streptococcus agalactiae (B)
Pseudomonas spp (aeruginosa)
Haemophilus parainfluenzae
Enterobacteriaceae spp
Legionella spp
gram-negative bacteria
Escherichia coli

Viral

H5N1, H1N1
H3N2, Infl. B
Rhino Virus
Adenovirus
RSV
parainfluenza virus (1,2,3,4)
Coronaviruses
human metapneumovirus (HMPV)

*105 Tests Shown, Another **20+ pages** show all available tests w/

BCBSWY – Complete Blood Count w Diff

White blood cell count
Red blood cell count
Hemoglobin
Hematocrit
Mean corpuscular volume
Mean corpuscular hemoglobin
Mean corpuscular hemoglobin concentration
Platelet count
Mean platelet volume

Renal Panel

Albumin
BUN
Calcium
CO2
Chloride
Glucose
Phosphorous
Potassium
Sodium
Creatinine
eGFR

Thyroid Panel

TSH
T-3
T-4

Liver Panel

ALT
Alkaline Phosphatase
AST
Ferritin
GGT
Iron
Lactate Dehydrogenase
Microalbumin
Total Protein
Albumin
Globulin
Bilirubin Direct
Bilirubin Total

Complete Metabolic Panel

HGB A1c
Glucose
Calcium
Albumin
Total Protein
Sodium
Potassium
CO2
Chloride
BUN
Creatinine
ALP
ALT
AST
Bilirubin
Magnesium

Ipecac
Lsd,
Lsd-25,
Lysergide,
Nalbuphine
Nubain{R}
Rohipnolâ®
Stadolâ®
Ethyl Glucuronide,

Cardiovascular Panel

Creatinine
Kinase
Troponin-I
Troponin-t
CRP- High-Sensitivity & LS
Homocysteine

Lipid Profile & Glucose Panel

Cholesterol
HDL
LDL
LDL/HDL Ratio
Triglycerides
VLDL

STDs & Drugs of Abuse

Chylmd Trach, Dna, Amp Probe
N.Gonorrhoeae, Dna, Amp Prob
Hpv, Dna, Amp Probe
Acid
Butorphanol
D-Lysergicacid Diethylamide,
Dolophine,
Flunitrazepam
Hairstat
Heroin,

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Cost Savings Through Theranos' Pricing Model

- Theranos is pricing each of our tests at 30% of the Medicare fee schedule for US commercial use.
- The only costs associated with Theranos' US commercial deployments to providers are on a per-test basis.
  - As such, Theranos eliminates the costs of phlebotomists, multiple analyzers, reagents that may or may not be used, multiple humans processing each test, processing equipment, the costs associated with discarding tests that are no longer usable due to potential temperature fluctuations in certain environments, as well as the cost of having to fly patients out of the country or to off-site locations where laboratory testing infrastructures are in place.
- Theranos has built electronic billing systems which can help facilitate payment logistics processes.

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Cost Savings Through Infrastructure Investments

Theranos is making large investments in infrastructure to facilitate roll-out, and has historically assumed the costs associated with the following:

- Cost of manufacturing, shipping, handling, maintenance. All repairs and services.
- Training and certification at all sites
- 24x7 call center support
- On-site laboratory tech support
- All shipping, handling and inventory management costs
- Patient kits
- Data communication costs
- Data Security, data encryption and related costs for data integration
- Routers for data communication as needed
- Biometric capture capabilities as needed for screening
- Remote monitoring for quality
- Decision support systems
- Clinical decision support applications
- Software systems to interface with EMR systems
- Software Systems to interface with hospital systems
- …

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Selected Assay Pricing List

The following examples represent a selection from the Theranos test menu.

TEST	Theranos US Commercial Pricing
CMP (Albumin, Billrubin, Calcium, Chloride, Creatinine, Carbon Dioxide, Glucose, Alkaline Phosphatase, Potassium, Protein, Sodium, Aspartate Aminotransferase, Urea Nitrogen, GFR, Albumin/Globulin, Anion Gap	
Albumin (serum)	$2.12
Albumin (urine)	$2.20
Bilirubin	$2.13
Chloride	$1.95
Creatinine	$2.18
Carbon Dioxide	$2.08
Glucose	$1.67
alkaline Phosphatase	$2.20
Potassium	$1.95
Protein	$1.56
Sodium	$2.05
Aspartate Aminotransferase	$2.20
Urea Nitrogen	$1.68
GFR	$1.90
Albumin/Globulin	$2.10
Anion Gap	$1.90

Note: Theranos is making the following prices available in the US commercial market. If significant customization or other requirements are needed for potential programs, costs may vary.

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Selected Assay Pricing List (Cont'd)

TEST	Theranos US Commercial Pricing
Lipid (Cholesterol, Triglyceride, HDL Chol, LDL Chol, VLDL Chol, Cholesterol/HDL Cholesterol)	
Cholesterol	$1.85
Triglyceride	$2.45
HDL Chol	$3.48
LDL Chol	$3.48
VLDL Chol	$4.94
Cholesterol/HDL Cholesterol	$1.85
CBC (WBC, RBC, Hemoglobin, Hematocrit, MCV, MCH, MCHC, RDW CV, Platelets, MPV, Neutrophils, Monocytes, Eosinophils, Basophils)	
WBC	$3.31
Neutrophils	
Monocytes	
Eosinophils	
Basophils	
RBC	$1.28
Hemoglobin	$1.01
Hematocrit	$1.01
MCV	$1.01
MCH	$1.01
MCHC	$1.01
RDW CV	$1.01
Platelets	$1.90
MPV	$1.01

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Selected Assay Pricing List (Cont'd)

TEST	Theranos US Commercial Pricing
LFT (Albumin, Bilirubin Direct, Bilirubin, Alkaline Phosphatase, Alanine Aminotransferase, Aspartate Aminotransferase, Protein)	
Albumin	$2.12
Bilirubin Direct	$2.13
Bilirubin	$2.13
alkaline Phosphatase	$2.20
Alanine Aminotransferase	$2.25
Aspartate Aminotransferase	$2.20
Protein	$1.56
BMP (Urea Nitrogen, Carbon Dioxide, Chloride, Creatinine, Glucose, Potassium, Sodium, Calcium, Anion Gap, GFR)	
Urea Nitrogen	$1.68
Carbon Dioxide	$2.08
Chloride	$1.95
Creatinine	$2.18
Glucose	$1.67
Potassium	$1.95
Sodium	$2.05
Calcium	$2.19
Anion Gap	$2.19
GFR	$2.19

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Selected Assay Pricing List (Cont'd)

TEST	Theranos US Commercial Pricing
Troponin (Troponin T Cardiac)	$4.18
CK (CK)	$2.77
PT/PTT/INR (Prtime, INR) - Prothrombin time	$1.67
PT/PTT/INR (Prtime, INR) - Thromboplastin time, partial	$2.55
Free T4 (Free T4)	$2.75
HIV (HIV) - HIV-1	$3.77
HIV (HIV) - HIV-2	$5.74
HIV (HIV) - Hiv-1/hiv-2 single result	$5.83
HIV (HIV) - Hiv-1 dna amp probe	$14.91
HIV (HIV) - Hiv-2 dna amp probe	$14.91
B Strep (B Strep)	$14.91
Epstein Barr (Epstein Barr)	$5.57
Epstein Barr (Epstein Barr)	$7.71
Mono (Mono)	$11.38
Blood Type (Blood Type) - ABO	$1.27
Blood Type (Blood Type) - Rh	$1.27
Lead (Lead)	$5.15
Lead ZPP (Protophorphyrin Zinc)	$6.10

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Selected Assay Pricing List (Cont'd)

TEST	Theranos US Commercial Pricing
A1C (A1C)	$4.13
Hep C Antibody (Hep C Antibody)	$6.07
RPR (Reagin AB)	$1.82
PSA (Prostate Specific Ag)	$7.82
Amylase (Amylase)	$2.75
Lipase (Lipase)	$2.93
TSH (TSH)	$7.14
GGT (Gamma Glutamyl Transferase)	$3.06
Base Excess/Base Deficit (Base Excess/Base Deficit)	$3.06
Additional tests of interest include pH, West Nile Virus, Chagas Disease, Malaria, and Dengue.	
pH	$1.52
West Nile Virus	$7.16
Chagas Disease	$5.27
Malaria	$5.60
Dengue	$5.48

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Contents

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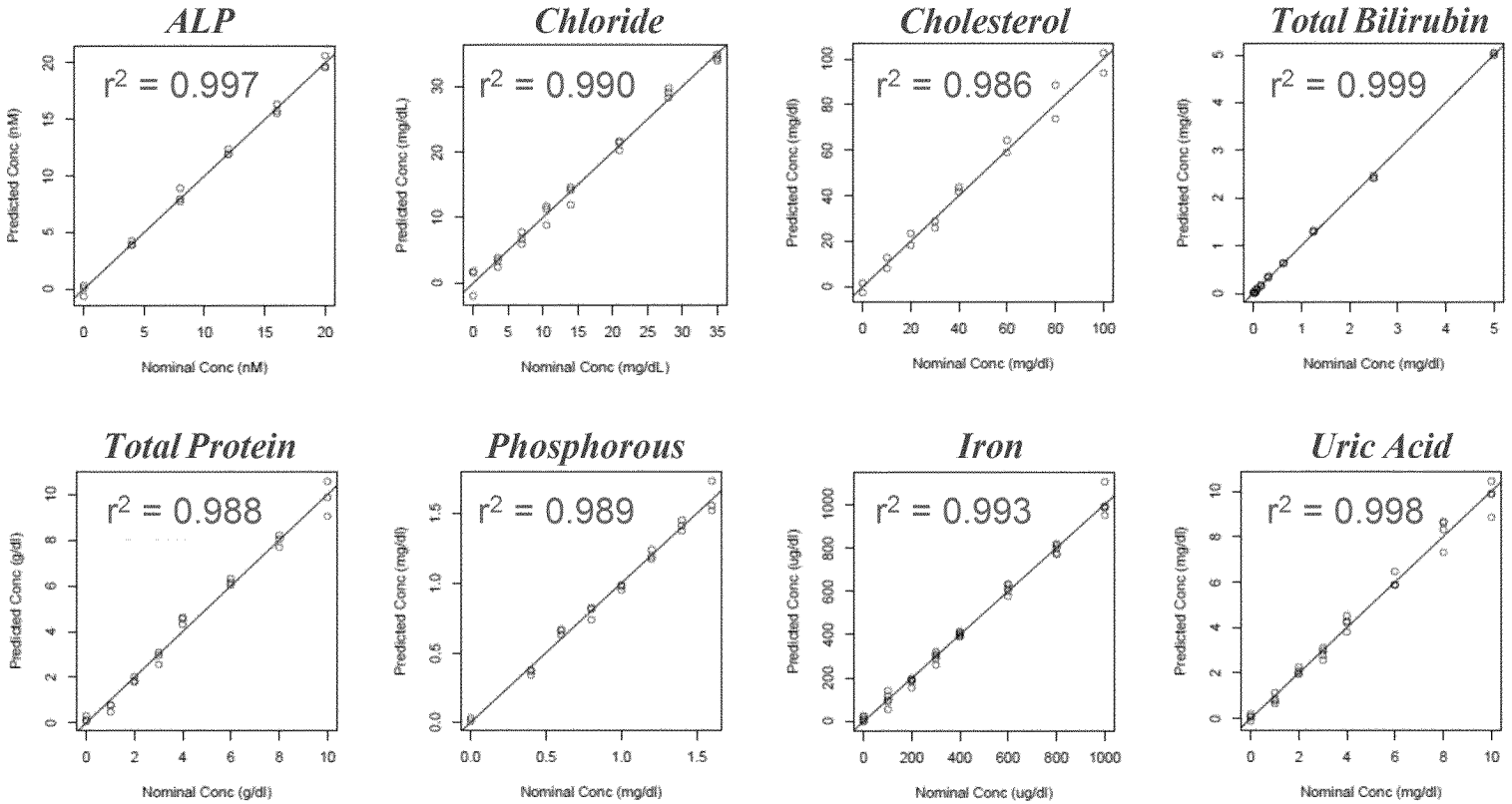
Routine Test Validations Demonstrate High Correlation Coefficients Across Clinical Range



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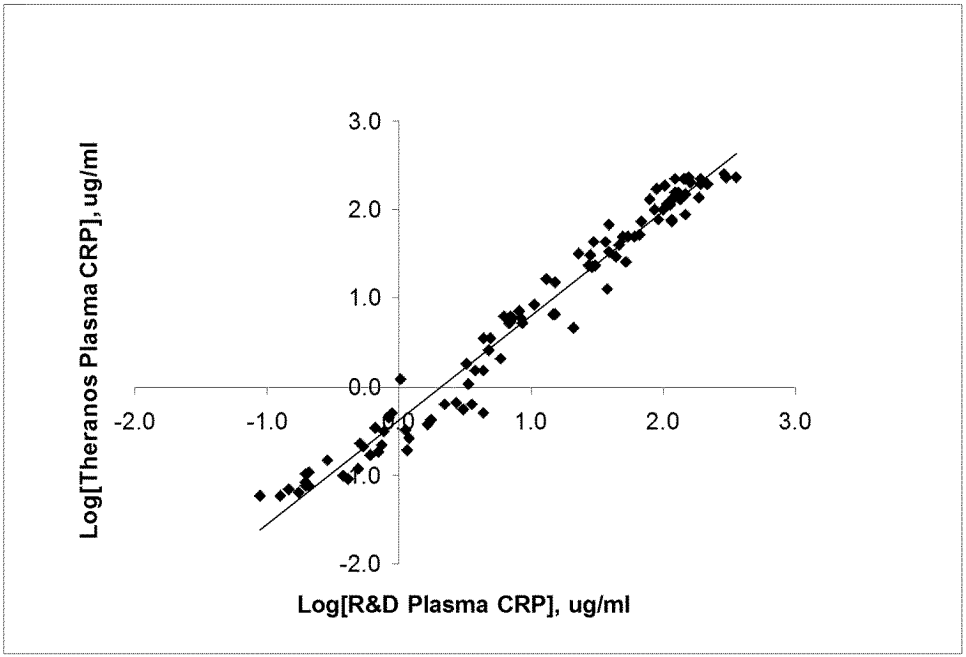
CRP Test Correlation to Reference Methods Over 10,000-fold Range

y = 1.179x - 0.3746, r2= 0.99, N = 104



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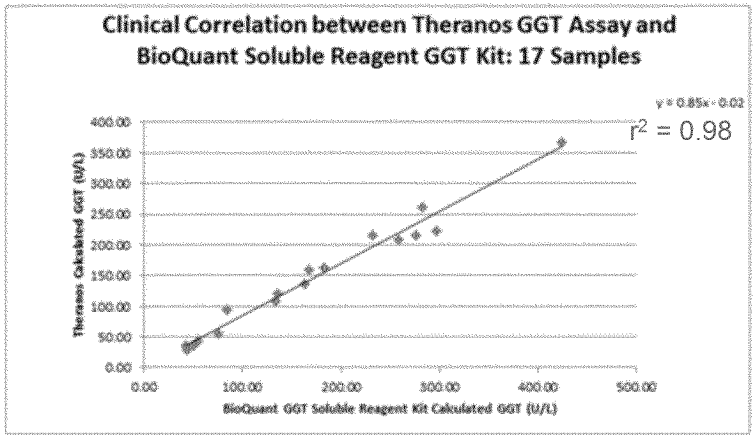
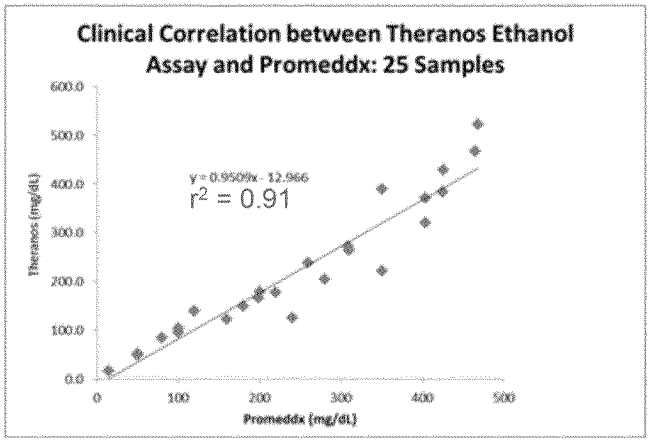
General Chemistries





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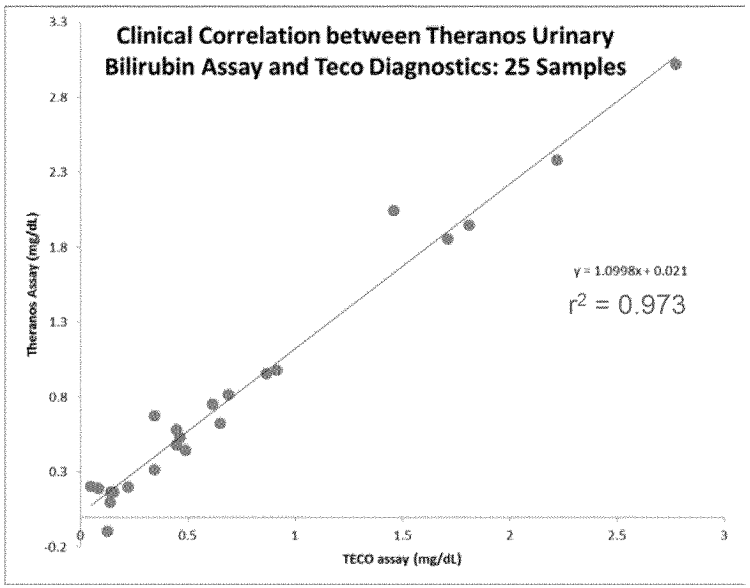
Assays in Sample Types Other Than Blood



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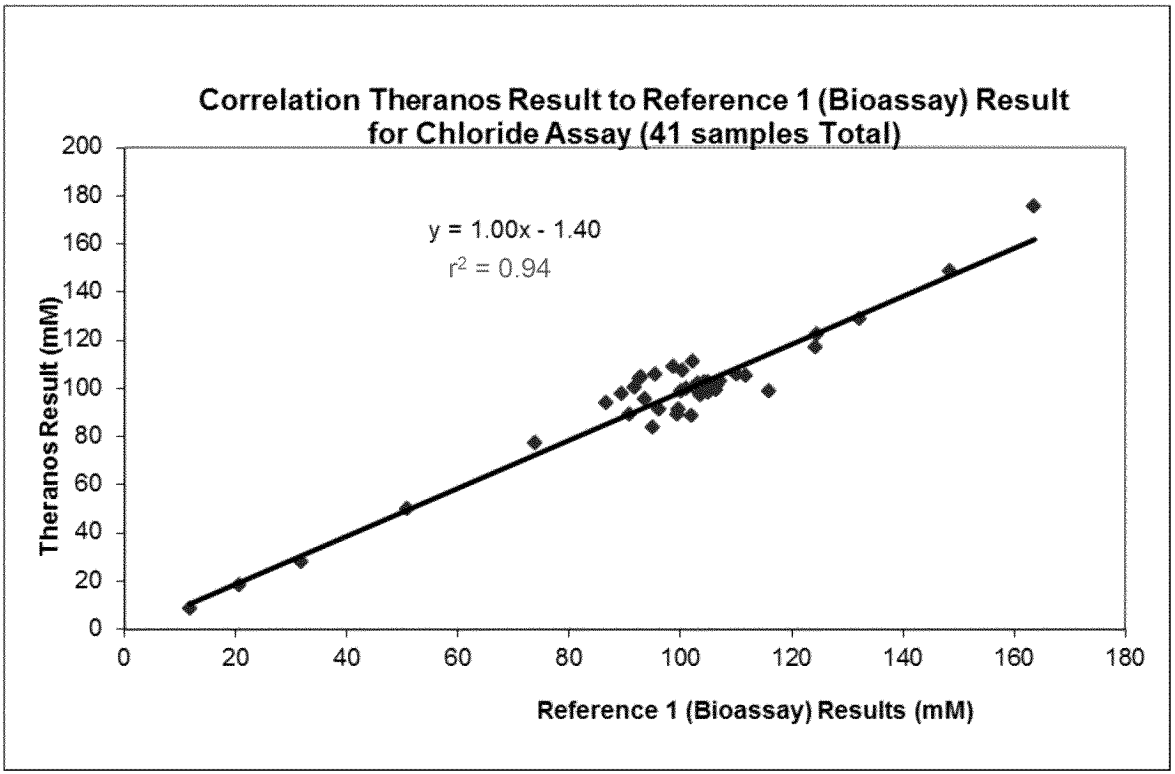
Chloride

(N = 41 clinical + spiked samples)



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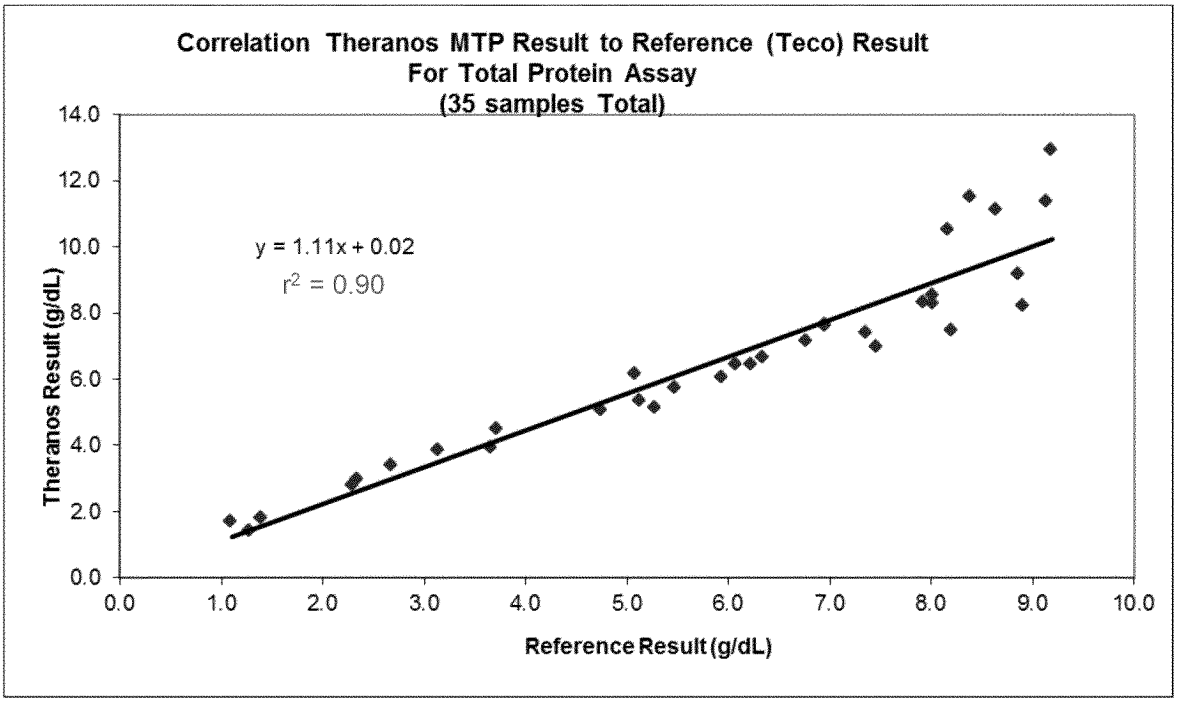
Total Protein

(N = 35 clinical samples)



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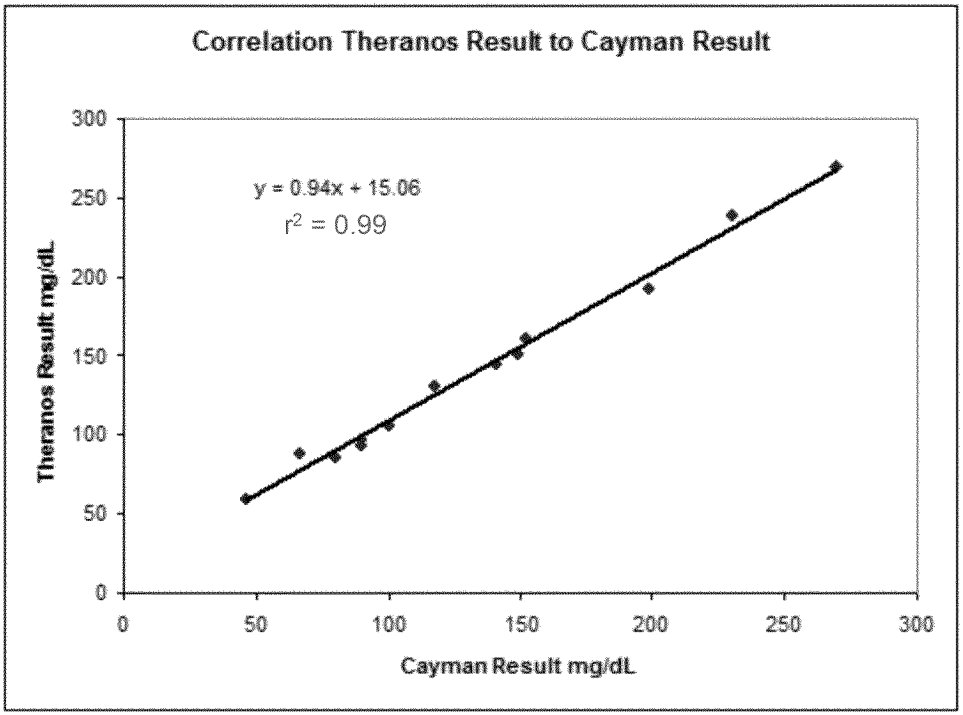
Glucose

(N = 13 clinical samples)



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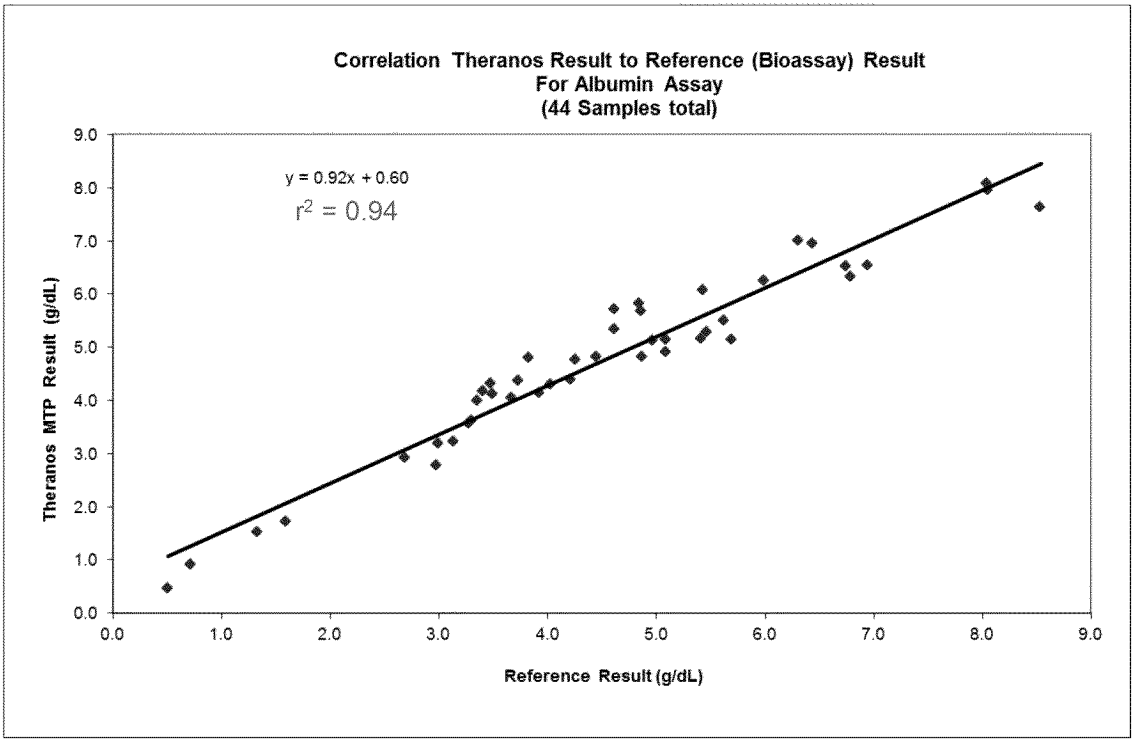
Albumin

(N = 44 clinical samples)



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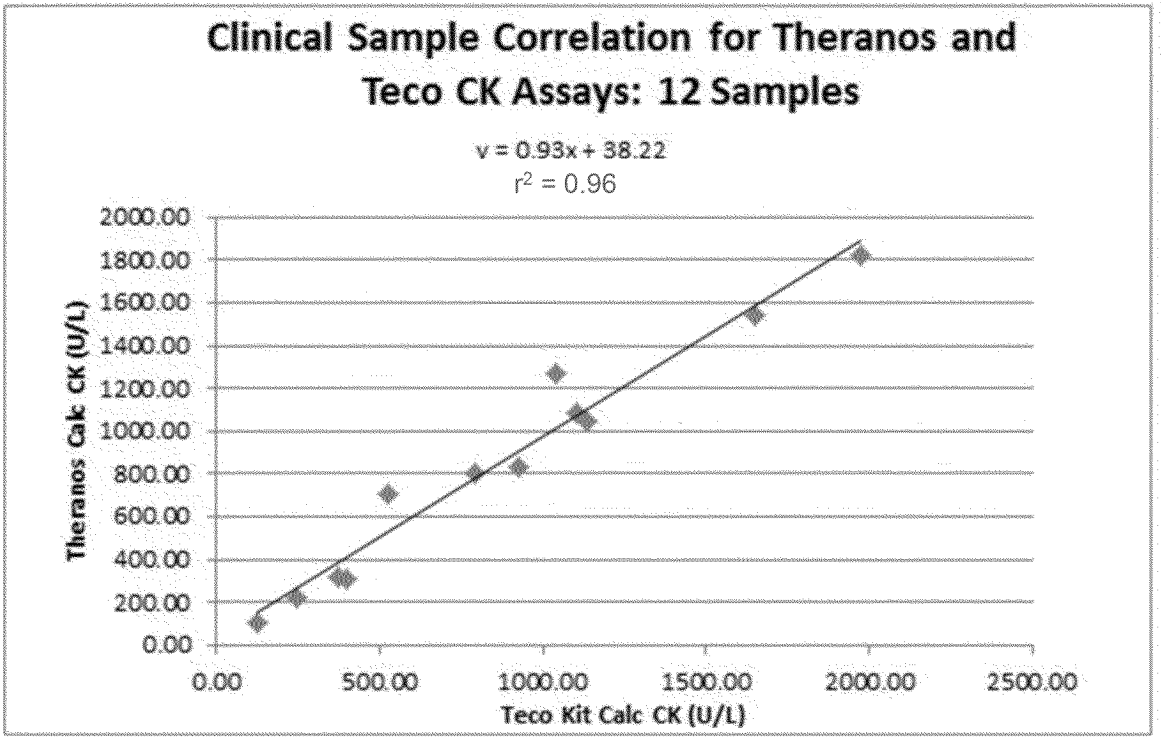
Creatine Kinase

(N = 12 clinical samples)



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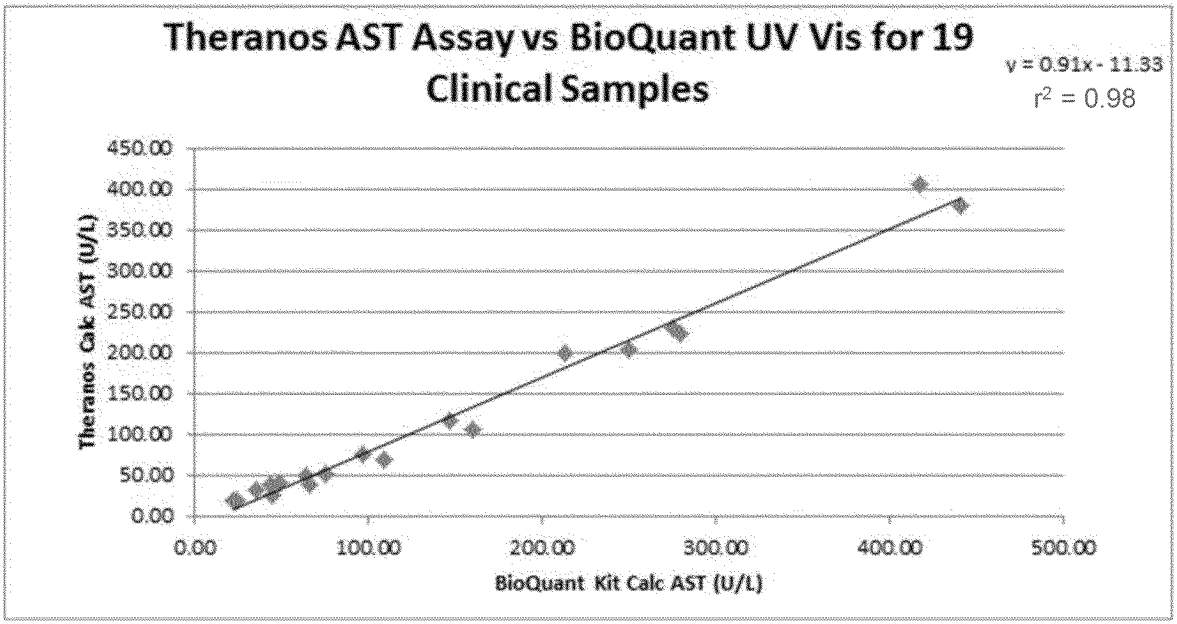
Aspartate Aminotransferase

(N = 19 clinical samples)



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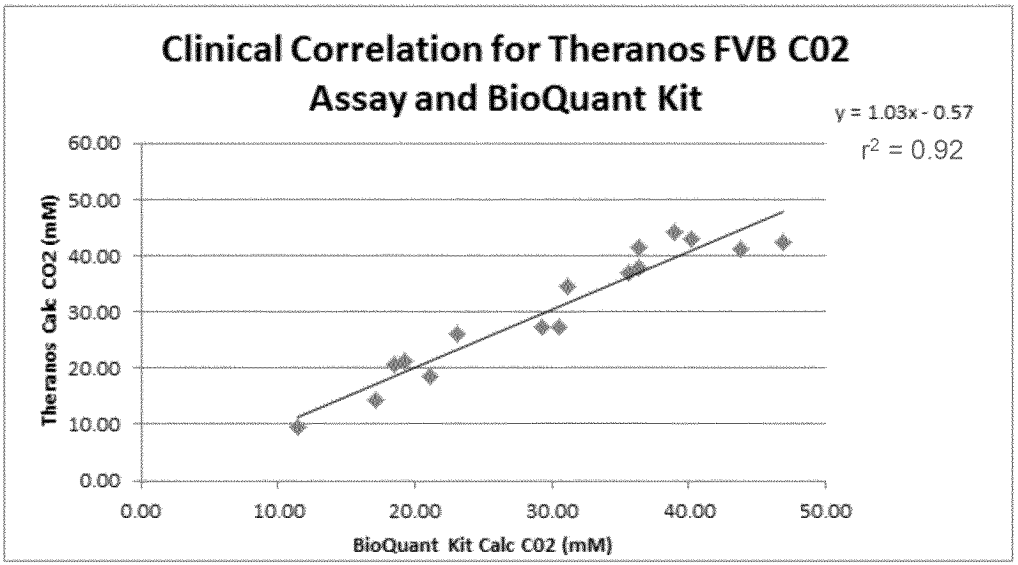
Carbon Dioxide

(N = 16 clinical samples)



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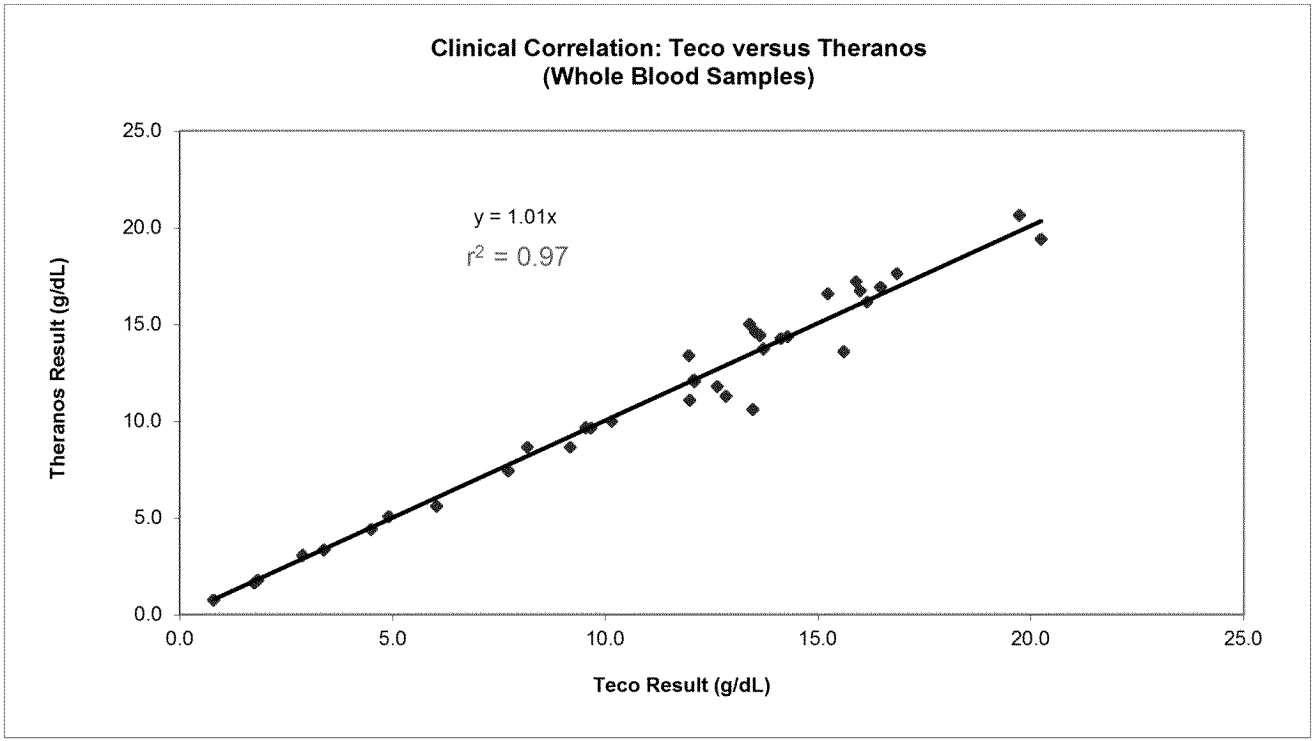
Hemoglobin

(N = 36 clinical samples)



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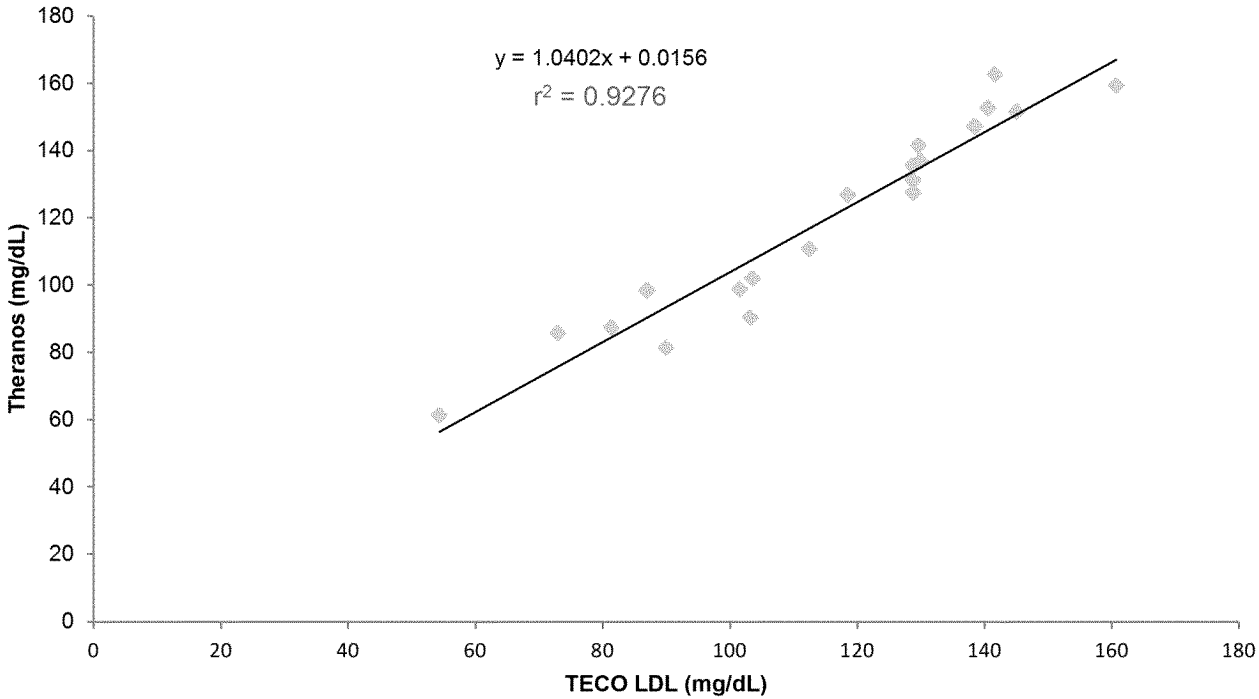
Direct LDL-Cholesterol

(N = 20 clinical samples)



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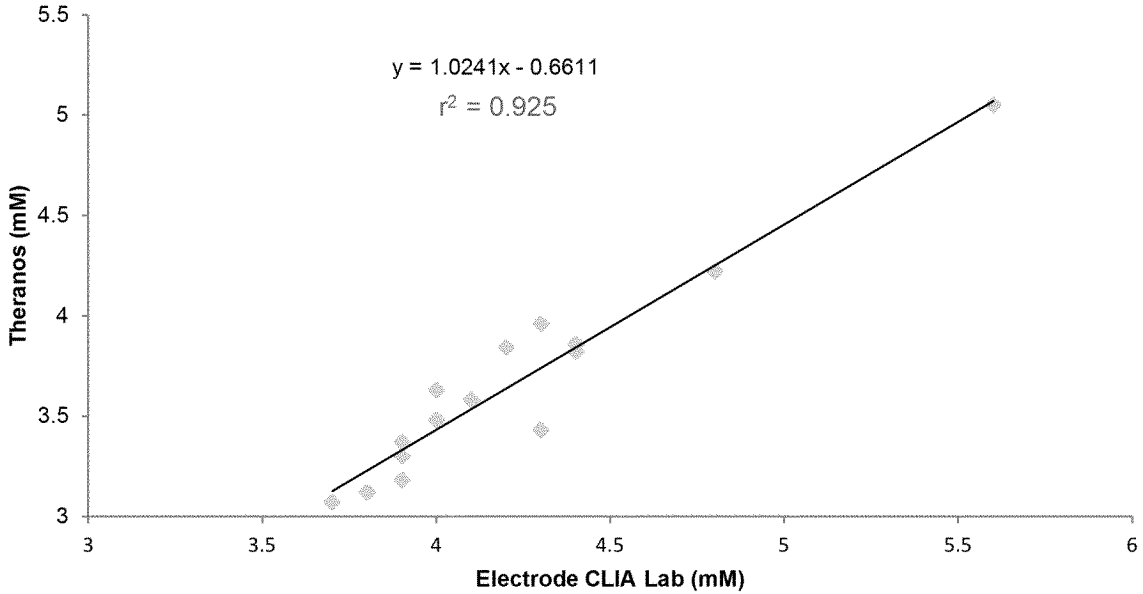
Potassium

(N = 15 clinical samples)



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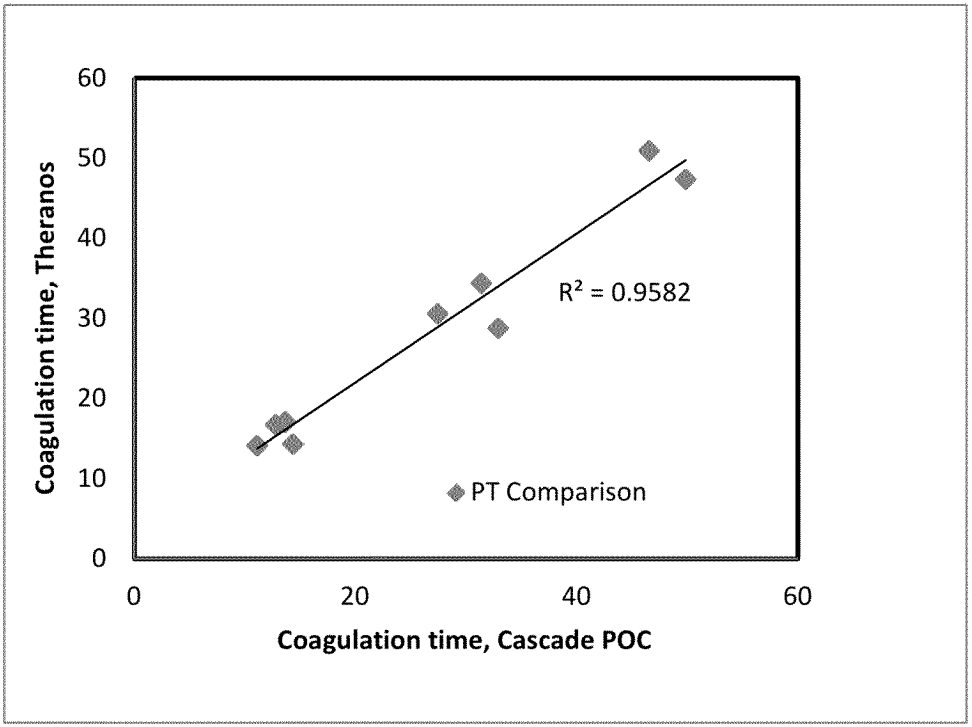
PT results – Clinical samples of patients on Coumadin



- Reference method: Cascade POC, Helena Laboratories, **35uL of undiluted Citrate plasma**.
- Theranos method: **2uL of 5X diluted EDTA plasma**.
- Excellent correlation between the two measurement sets.

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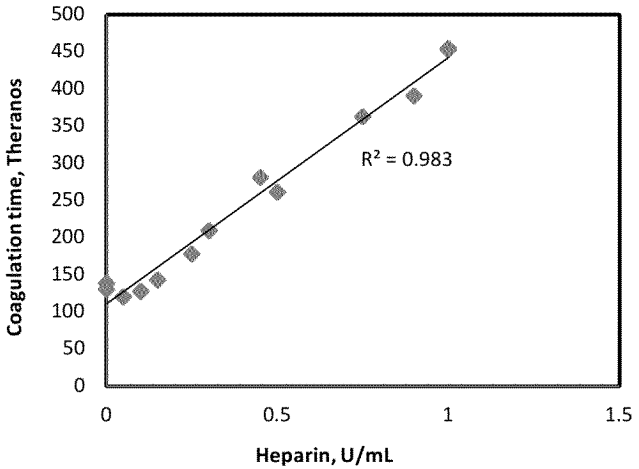
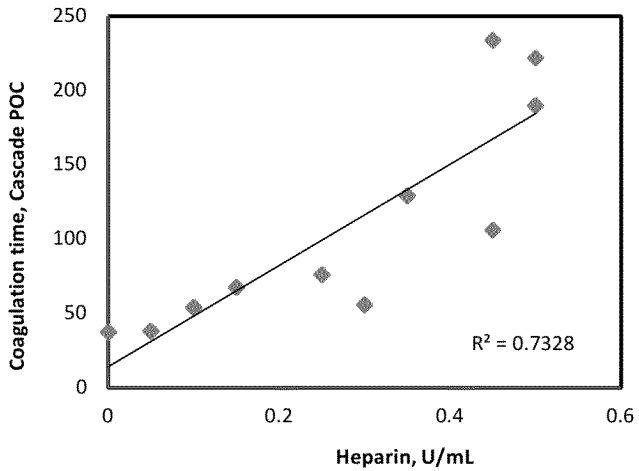
aPTT results – Plasma spiked with Heparin





- Reference method: Cascade POC, Helena Laboratories, **35uL of undiluted plasma** spiked with Heparin.
- Theranos method: **2uL of 5X diluted plasma**.
- Theranos method shows a better correlation with spiked Heparin compared to the Cascade system.

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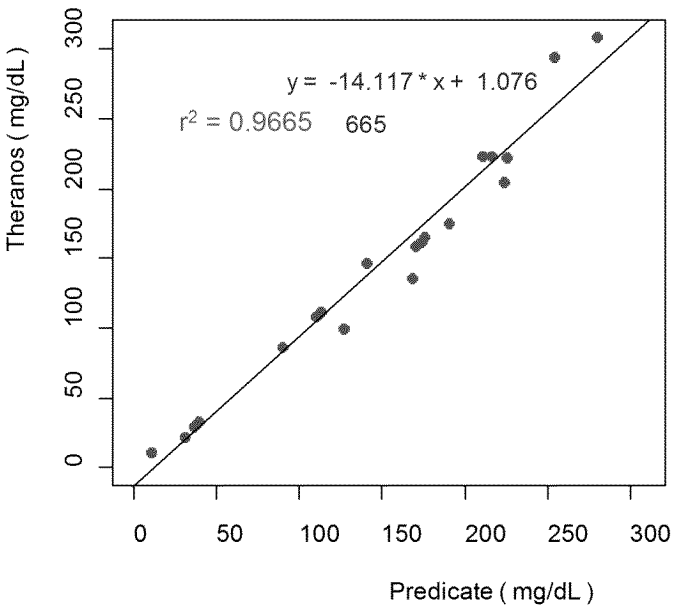
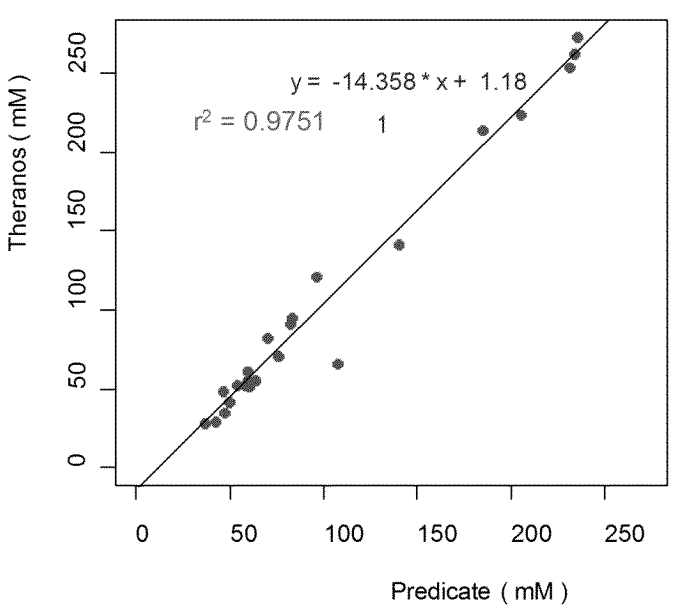
Urine Based Assays

Creatinine (Urine)



Chloride (Urine)



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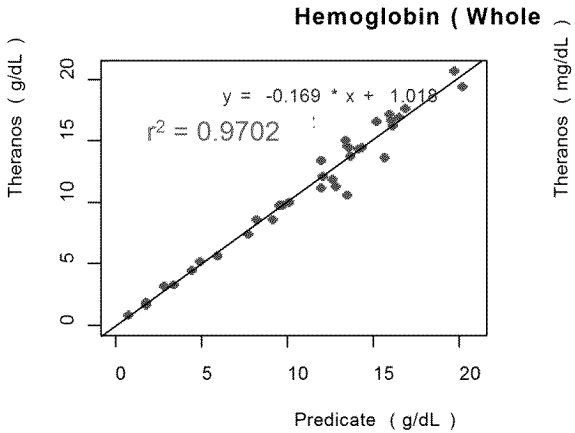
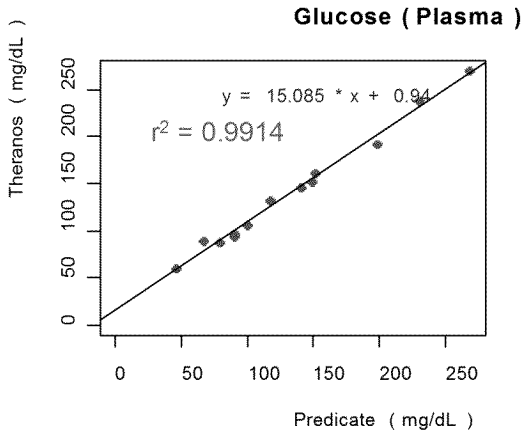
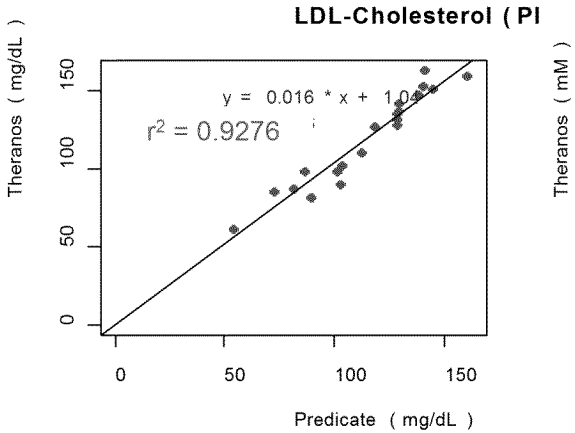
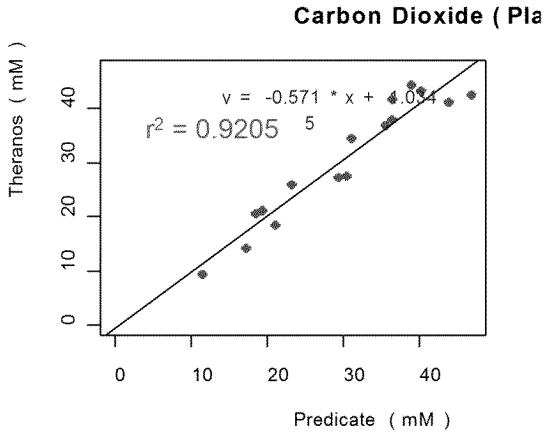
General Chemistries









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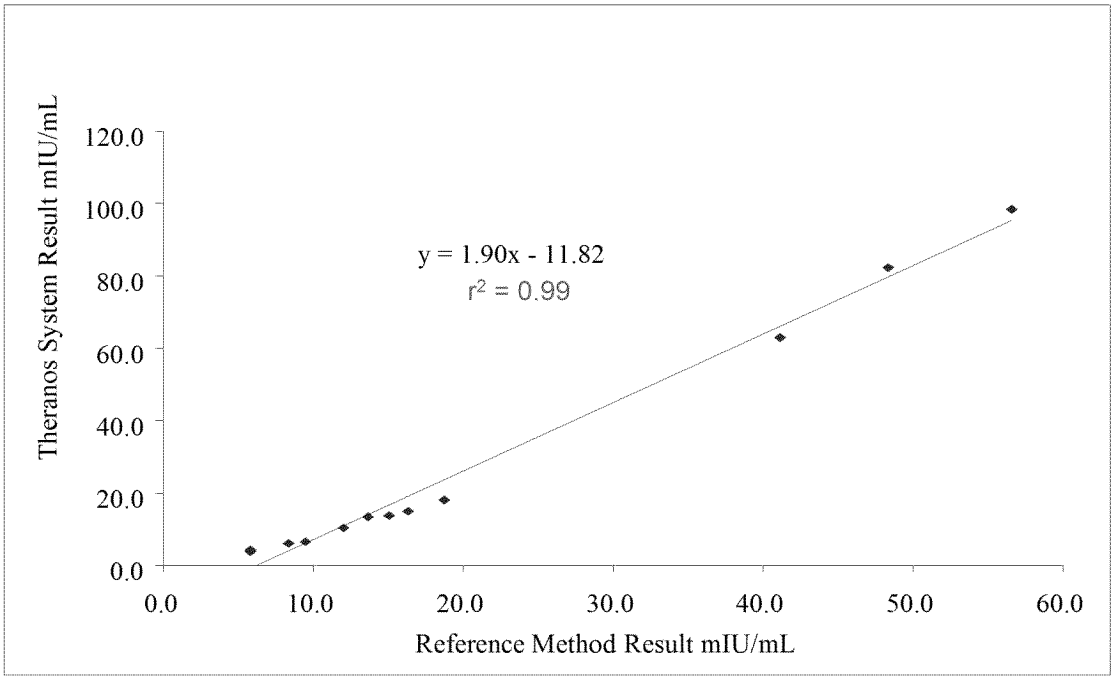
Follicle stimulating Hormone (FSH)



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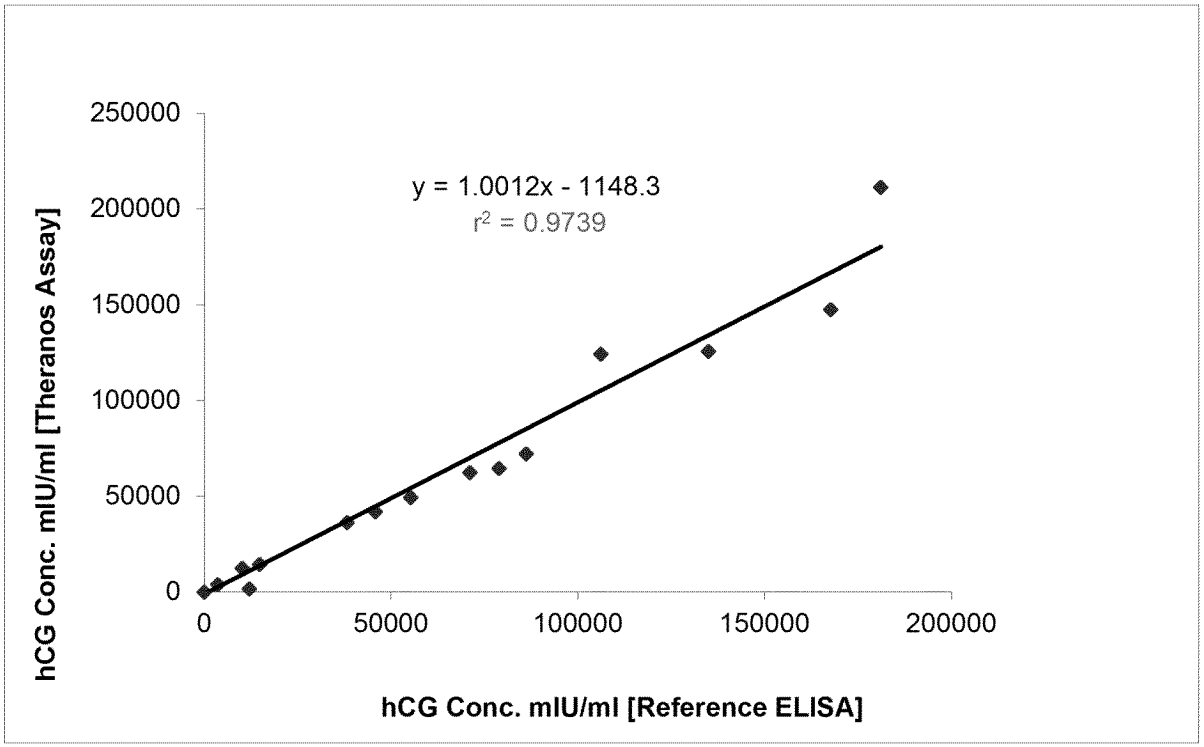
Human chorionic gonadotropin (hCG)



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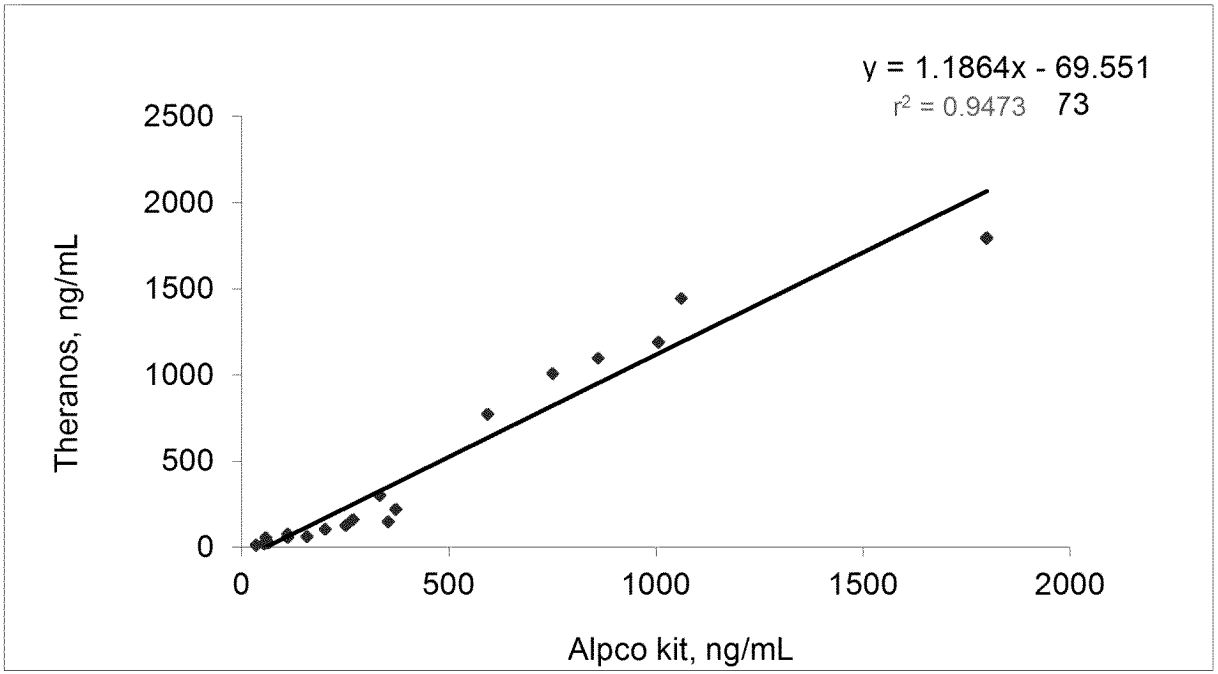
IgE



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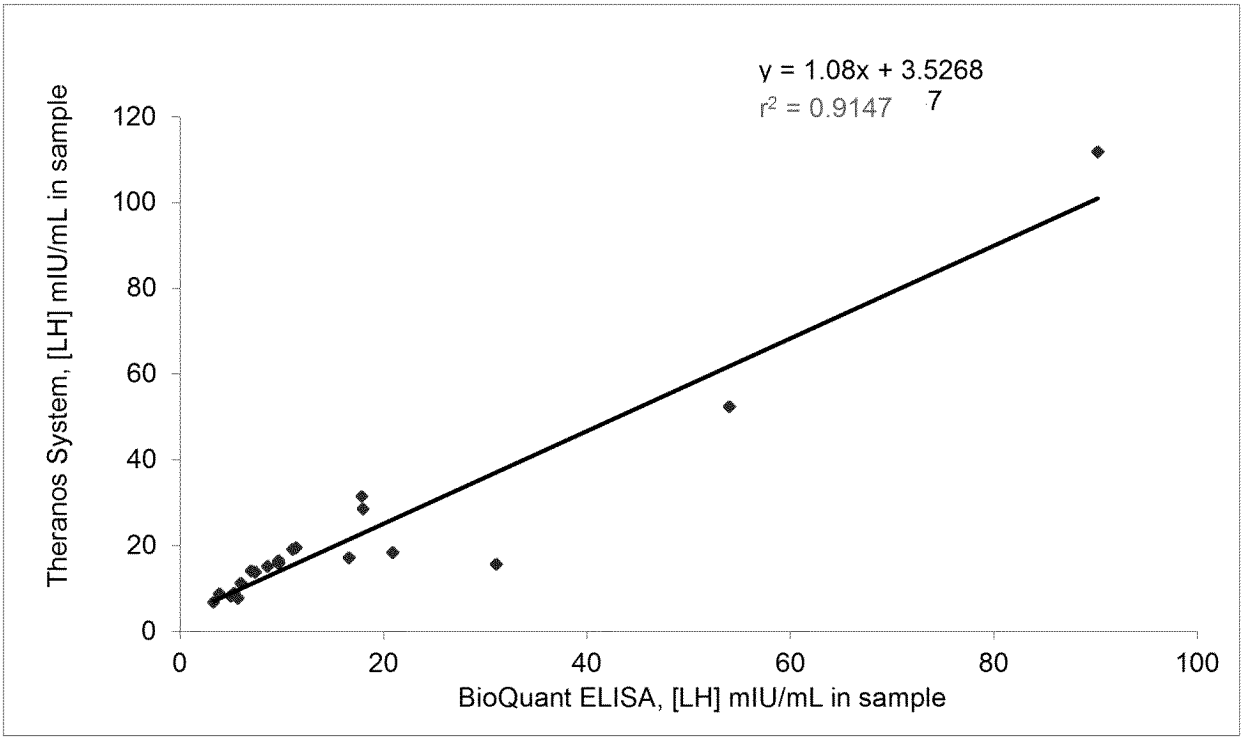
Luteinizing Hormone (LH)



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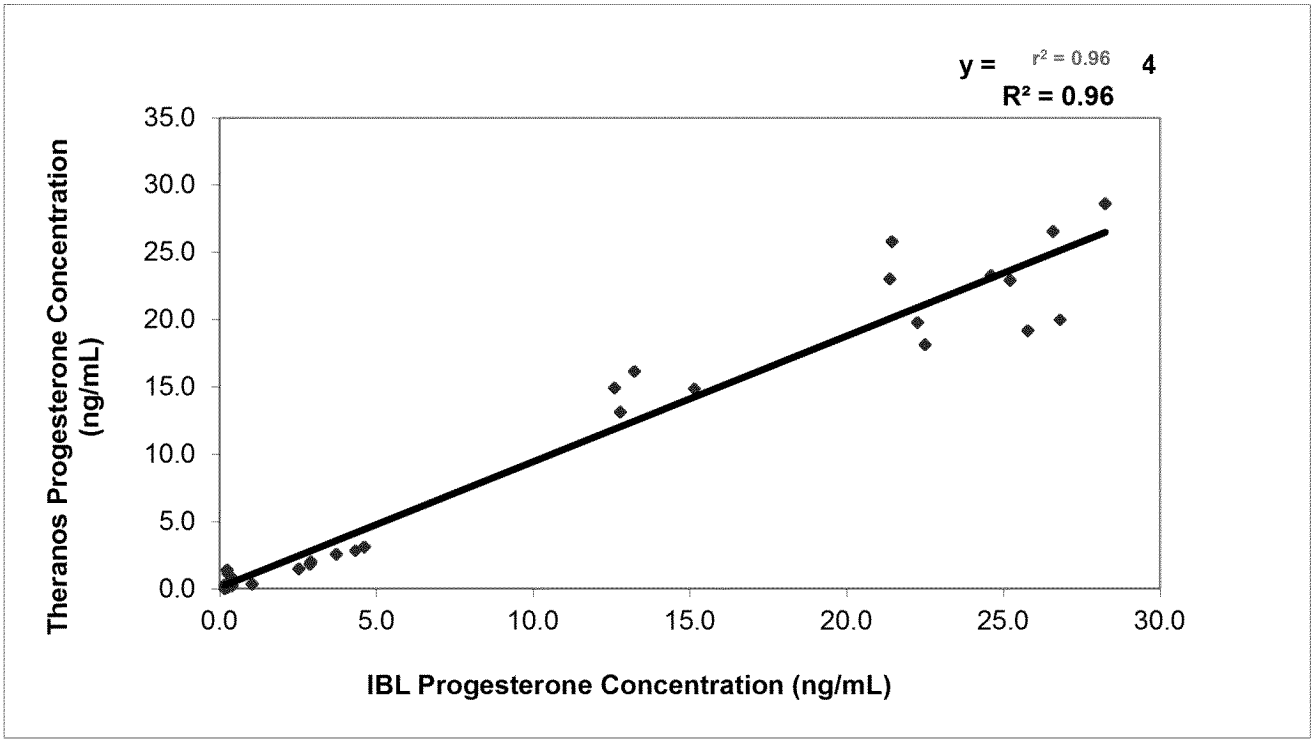
Progesterone



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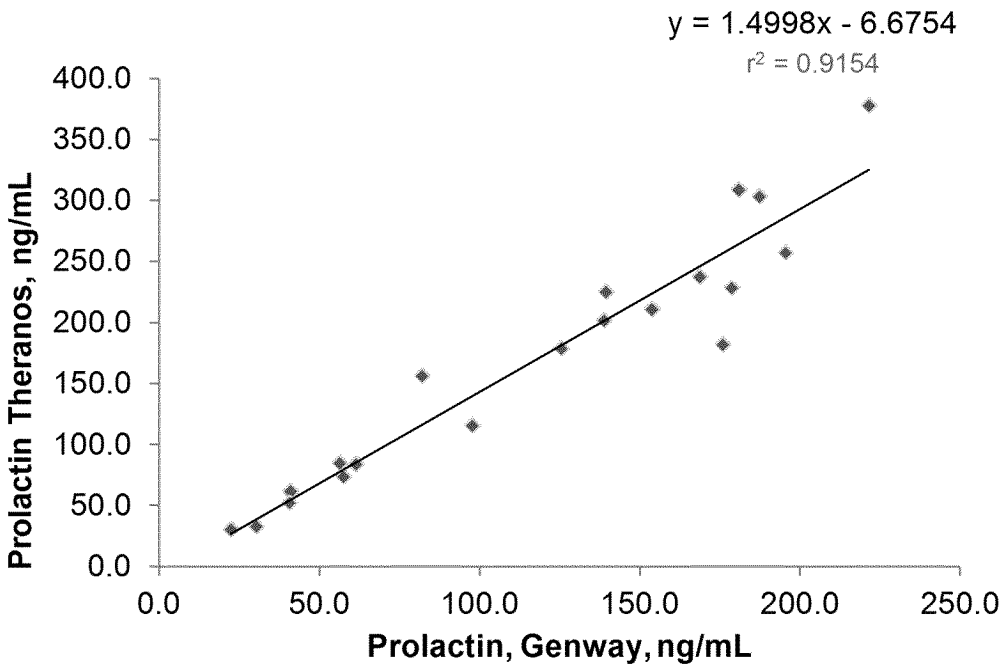
Prolactin



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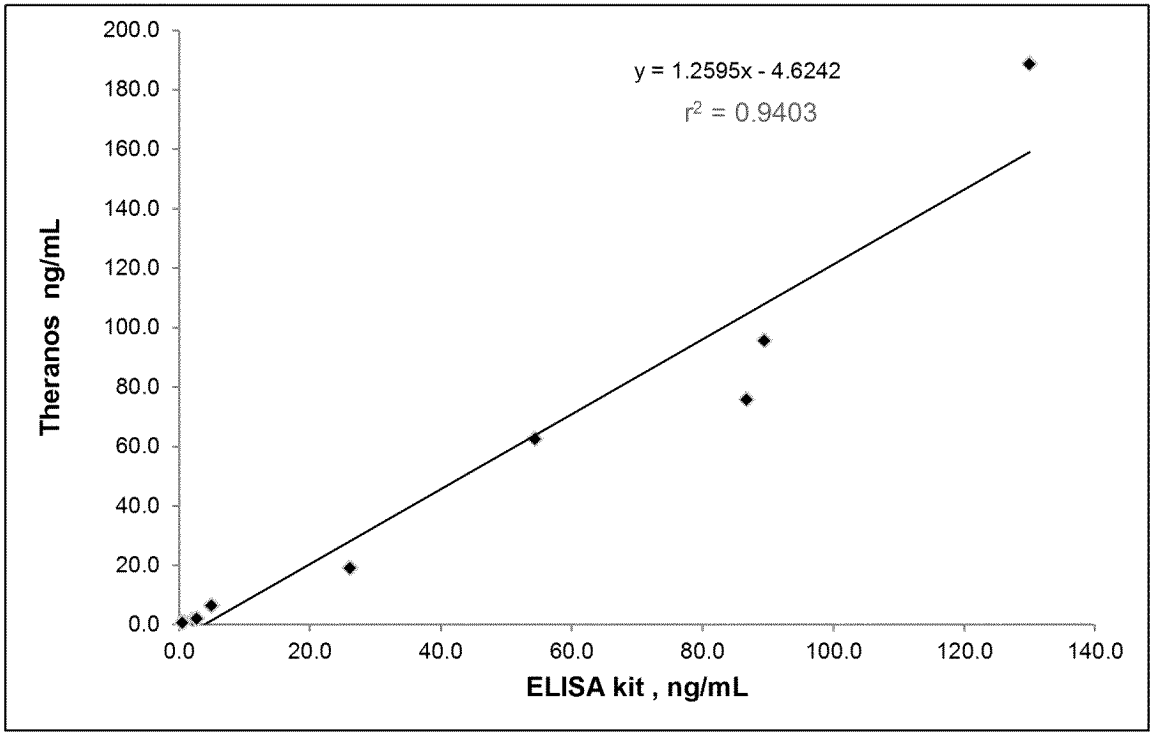
Total PSA



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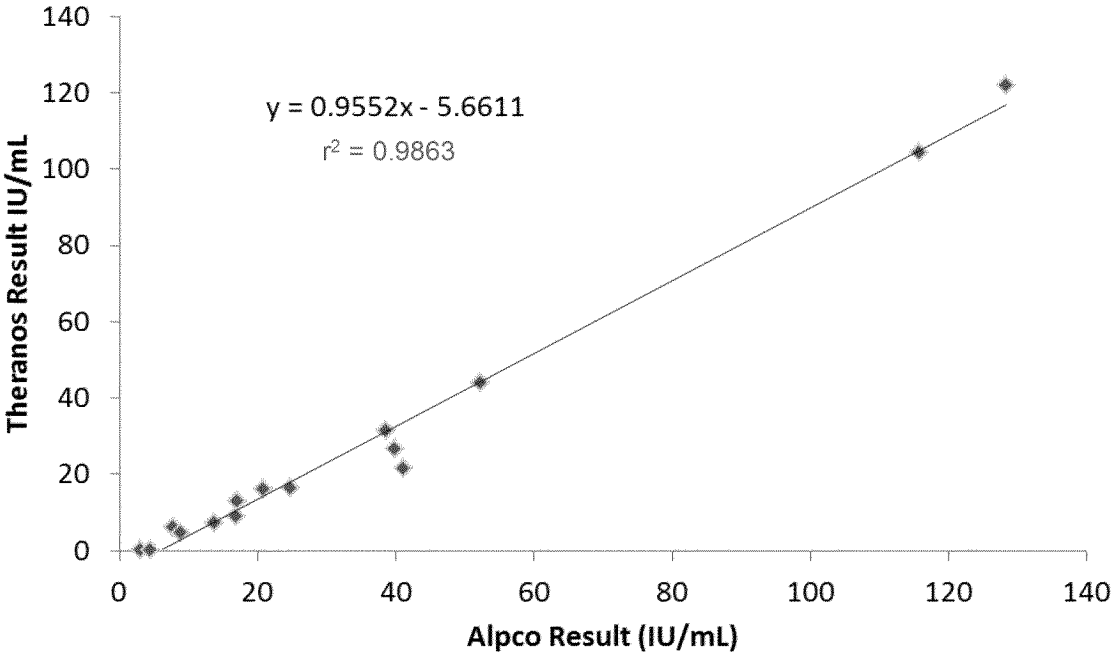
Rubella Antibody



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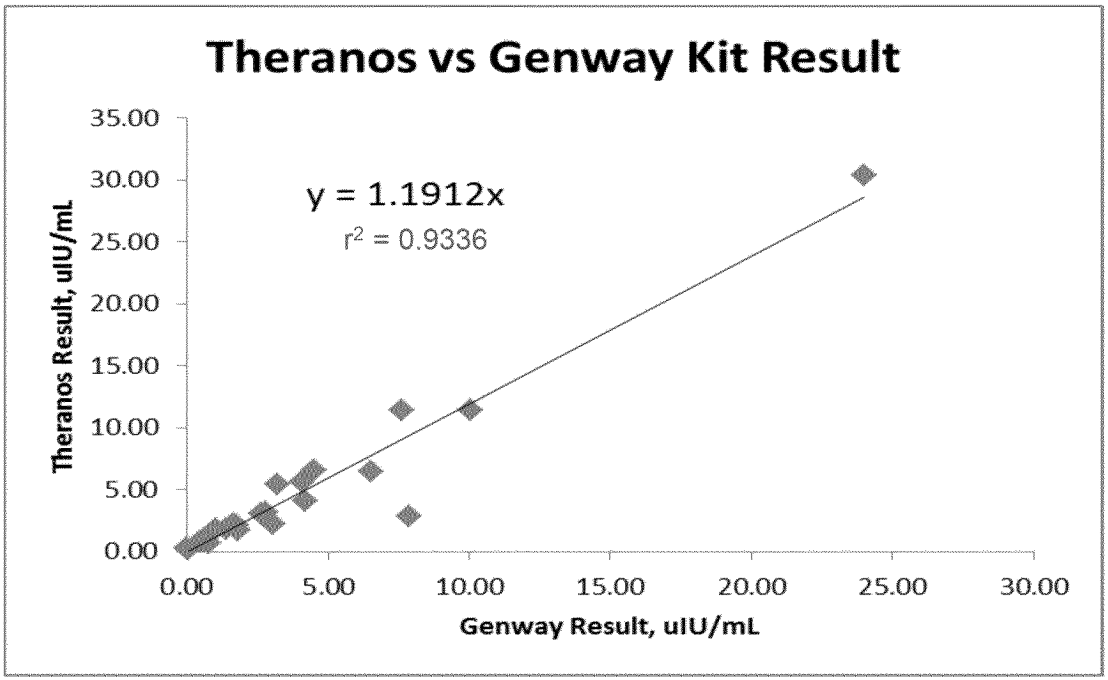
Thyroid stimulating hormone



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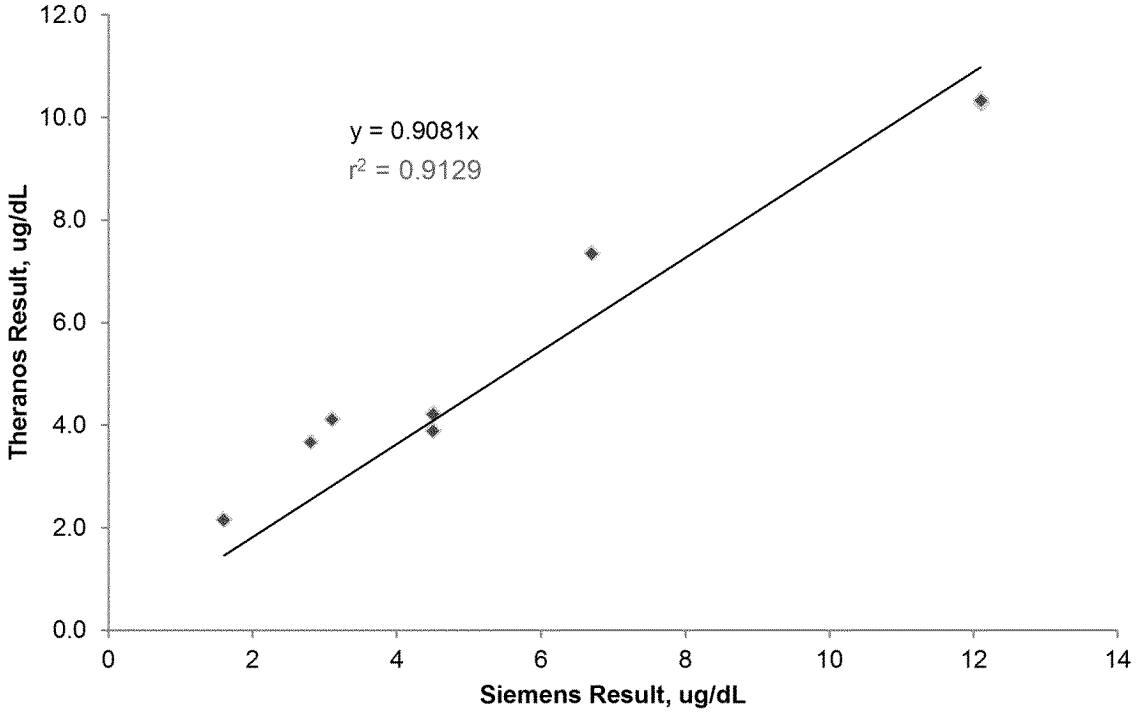
Total Thyroxine (TT4)



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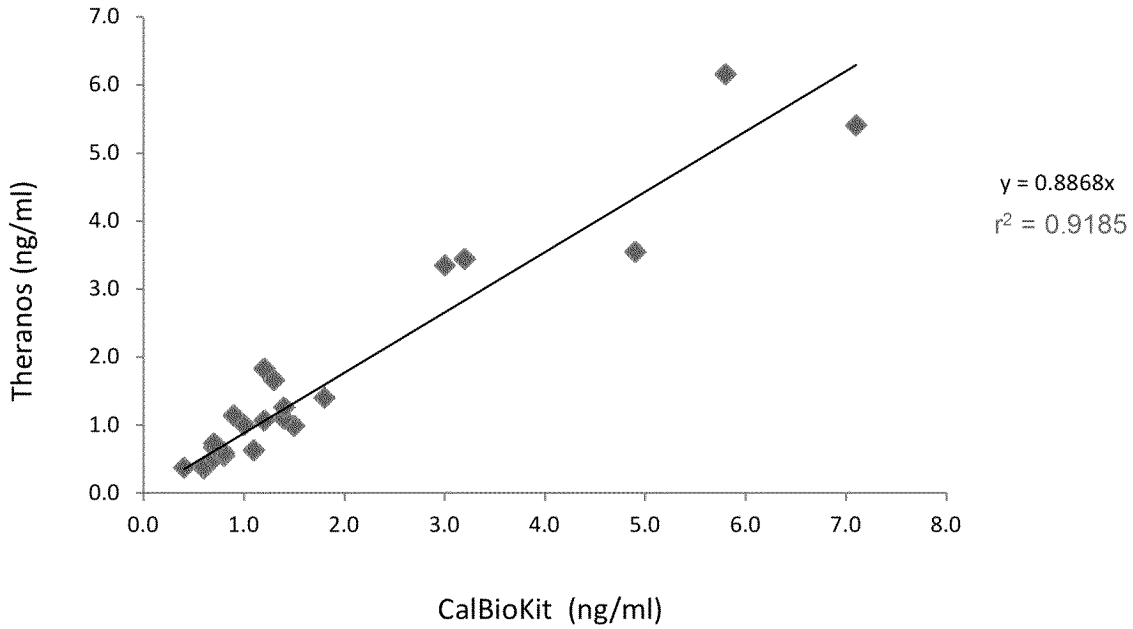
Total T3



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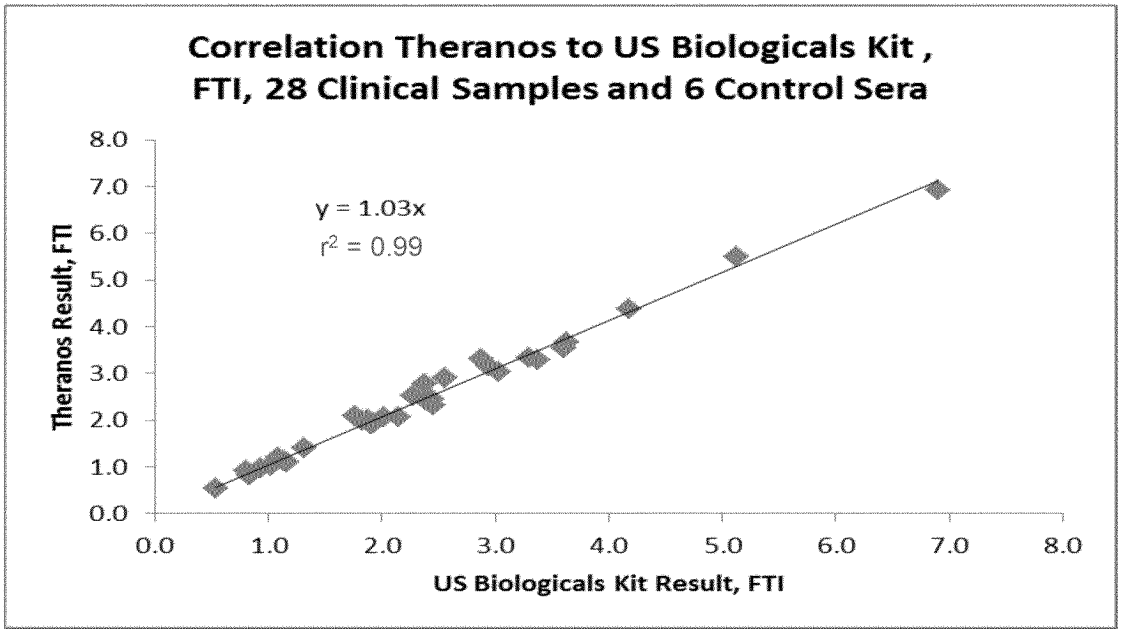
T3 Uptake assay



The T Uptake % is used to compute the Free Thyroxine Index (FTI) from the Total T4

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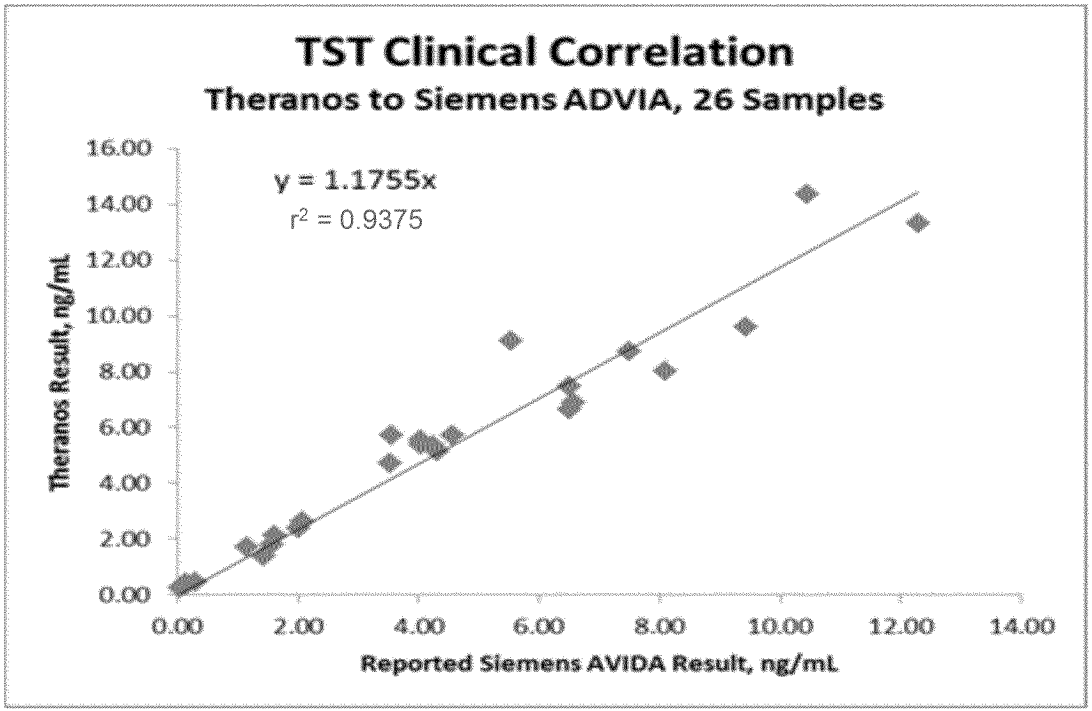
Total Testosterone



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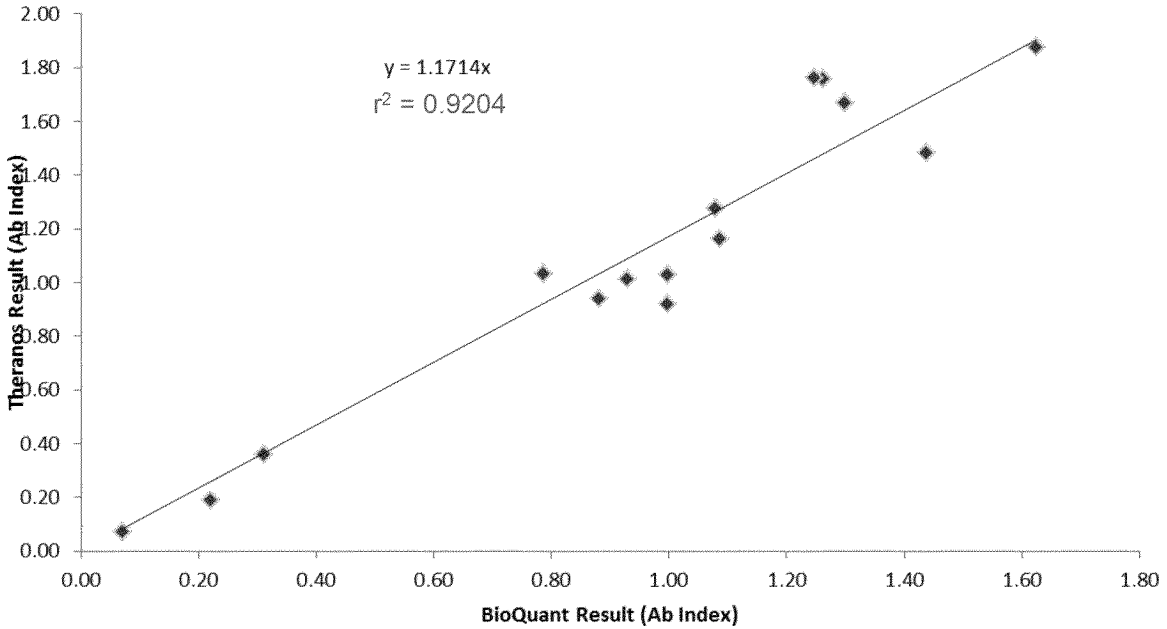
Varicella Zoster virus - IgG



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VZV – IgG Precision

Precision and Accuracy for 3 Days/Lots, Concentration (IU/mL)
N = 3 cartridges per point

[VZV IgG] IU/mL	Day/Lot 1			Day/Lot 2			Day/Lot 3			Inter-Lot		
	Mean Conc.	CV %	% Rec.	Mean Conc.	CV %	% Rec.	Mean Conc.	CV %	% Rec.	Mean Conc.	CV %	% Rec.
11.00	9.97	22.3	91	11.40	9.5	104	9.83	33.6	89	10.47	18.9	95
5.50	4.65	2.4	85	6.65	13.6	121	6.09	15.9	111	5.94	18.5	108
2.75	2.33	15.3	85	3.07	7.3	112	2.65	8.1	96	2.68	14.9	98
1.38	1.27	13.5	92	1.46	10.6	106	1.46	12.3	107	1.40	12.6	101
0.69	0.65	11.1	94	0.75	6.7	109	0.71	6.9	104	0.70	9.6	102
0.34	0.32	7.8	93	0.34	13.7	98	0.35	4.0	103	0.34	9.2	98
0.17	0.17	9.2	99	0.18	9.7	105	0.17	1.9	98	0.17	7.5	101
0	OORL	-	-	OORL	-	-	OORL	-	-	OORL	-	-
Positive Control	4.25	8.6	-	3.70	11.7	-	4.25	9.3		4.05	11.0	-
Negative Control	OORL	-	-	OORL	-	-	OORL	-	-	OORL	-	-

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VZV – IgG Precision

Inter-Analyzer Precision, Concentration (IU/mL)

			Intra-Cartridge			Inter-Cartridge	
Analyzer	Tip 1	Tip 2	Mean	CV %	% Recovery	Mean	CV %
1	0.26	0.27	0.26	4.1	86	0.31	7.2
2	0.34	0.35	0.35	1.1	113		
3	0.30	0.36	0.33	11.4	108		
4	0.26	0.28	0.27	4.8	89		
5	0.30	0.31	0.30	2.1	99		
6	0.28	0.27	0.28	3.6	90		
7	0.29	0.31	0.30	2.7	98		
8	0.32	0.32	0.32	0.3	104		
9	0.30	0.28	0.29	6.1	95		
10	0.32	0.33	0.32	1.0	106		
11	0.28	0.27	0.27	0.8	89		
12	0.30	0.32	0.31	4.4	100		
13	0.29	0.32	0.31	7.5	100		
14	0.35	0.32	0.34	4.8	109		
15	0.35	0.33	0.34	4.0	111		
16	0.31	0.31	0.31	1.2	101		
17	0.29	0.33	0.31	8.8	100		
18	0.31	0.25	0.28	16.8	91		
19	0.32	0.29	0.30	6.3	99		
20	0.29	0.31	0.30	5.9	98		
21	0.30	0.32	0.31	4.3	100		
22	0.33	0.31	0.32	4.7	104		
23	0.33	0.32	0.32	1.9	105		
24	0.33	0.31	0.32	5.0	103		

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Estradiol – Precision

QC Levels for 3 Day Precision and Accuracy

Nominal [Estradiol] pg/mL	Cartridge	Recovered [Estradiol] pg/mL					
		Day 1	Day 2	Day 3	Mean Conc.	CV %	% Recovery
478.50	1	522	481	448	455	8	95
	2	402	426	485			
	3	440	444	444			
92.63	1	114	104	72	92	14	99
	2	104	91	85			
	3	90	81	87			
45.38	1	36	37	37	41	11	90
	2	40	38	44			
	3	44	48	44			

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Estradiol - Precision

Analyzer	Signal (RLU)		Conc. pg/mL
	Mean RLU	Difference from Mean	
1	9287	-5	74
2	9523	-2	71
3	9991	2	66
4	10160	4	64
5	9397	-4	72
6	10383	7	62
7	10275	5	63
8	10351	6	62
9	8432	-14	84
10	8334	-15	86
11	9041	-7	77
12	9457	-3	72
13	10687	10	59
14	10984	13	57
15	10704	10	59
16	10823	11	58
17	10125	4	65
18	10222	5	64
19	10168	4	64
20	10452	7	61
21	8832	-9	79
22	8365	-14	85
23	8425	-14	84
24	9562	-2	71

Inter-Analyzer Concentration CVs			
Mean Conc. pg/mL	StDev	CV%	% Recovery
69	9	13	92

Inter-Analyzer Signal CVs		
Mean RLU	StDev	CV%
9749	835	9

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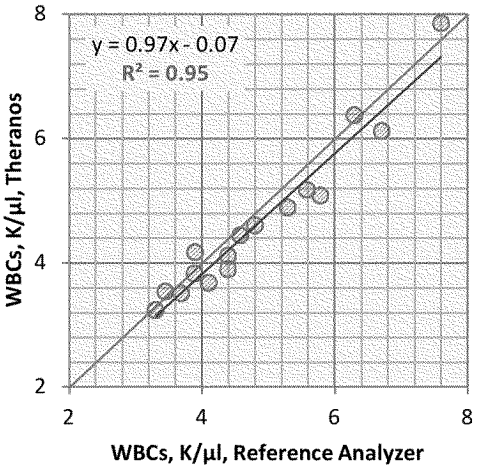
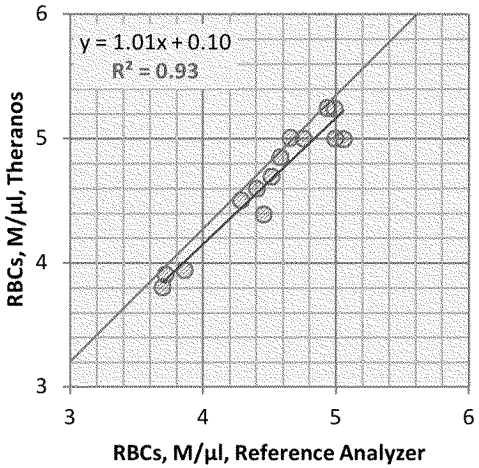
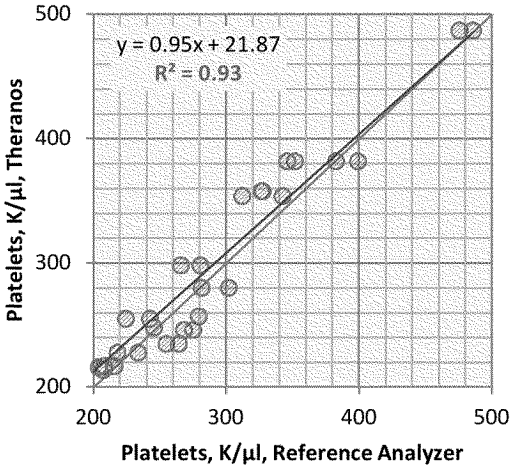
Total WBC, RBC and Platelet Counts: correlation between reference analyzer and Theranos platform







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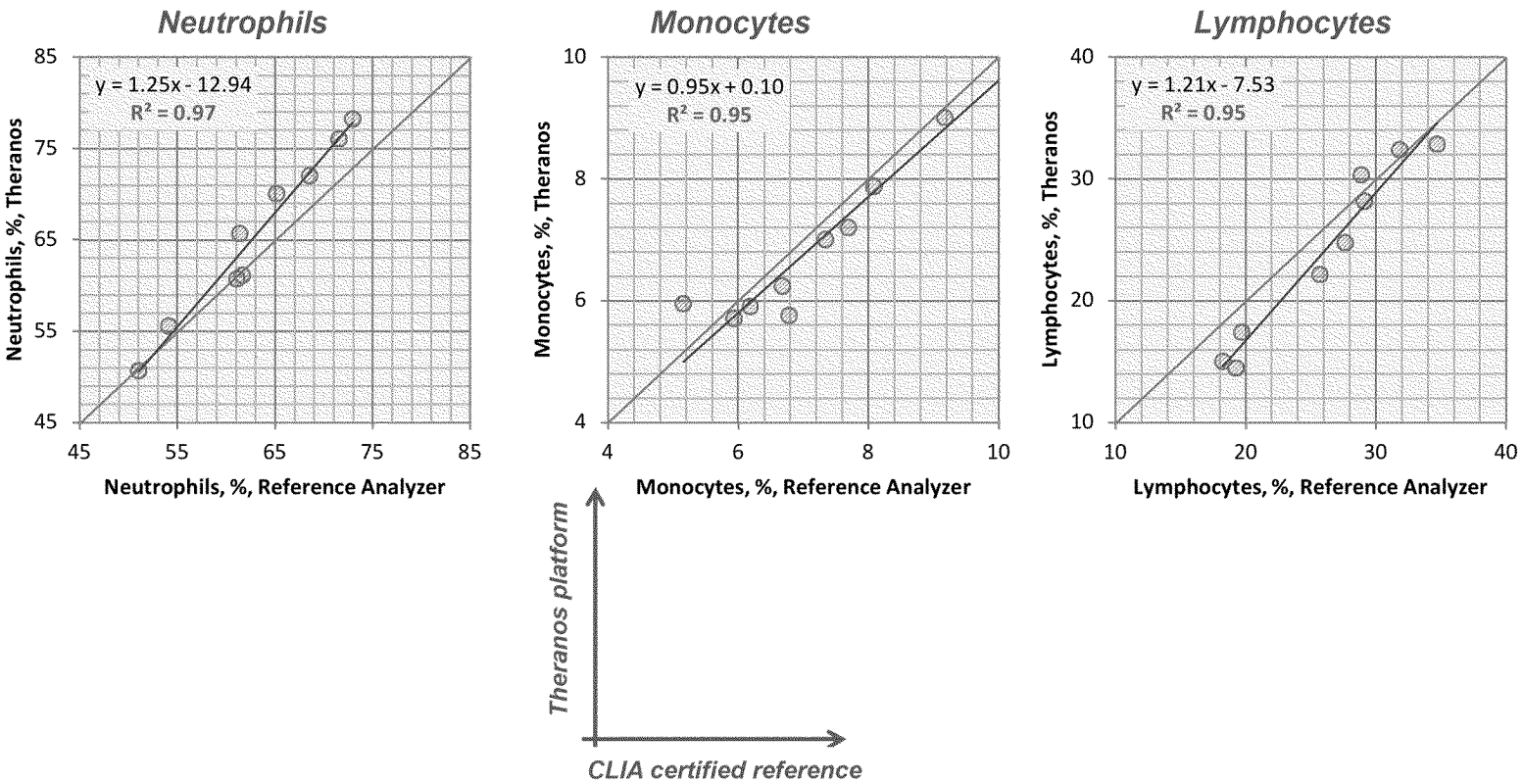
Correlation of WBC-differential assay between Theranos platform and reference hematology analyzer

All numbers are WBC cell type proportions expressed as percentages of total WBC



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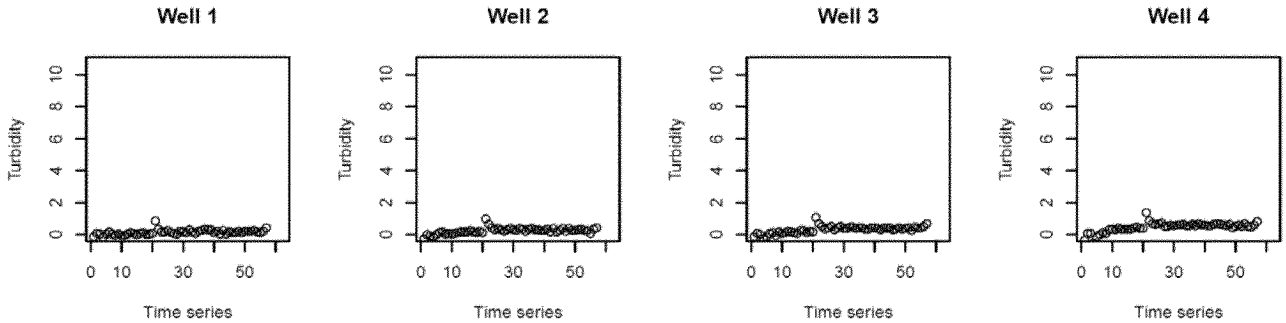
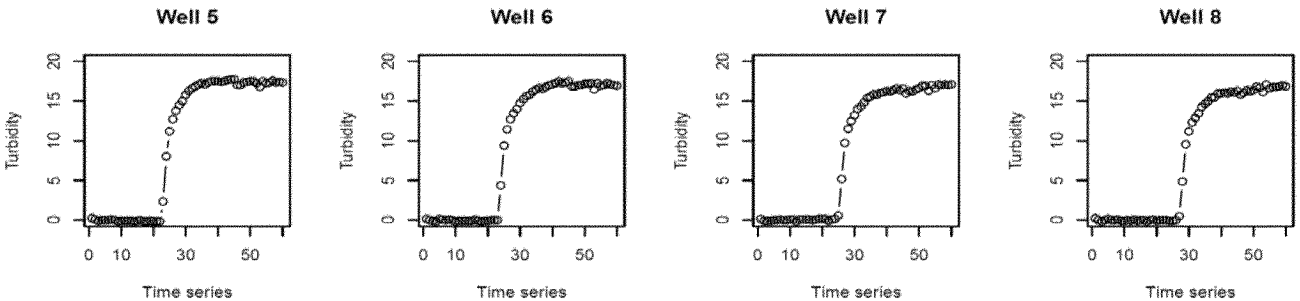
NAA detection (*E. Coli* O157)

Negative



Positive



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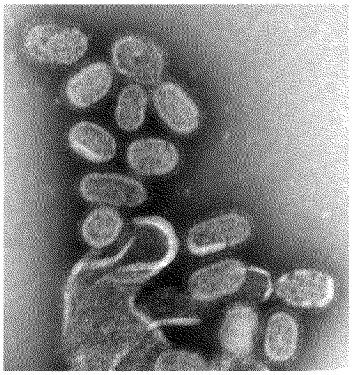
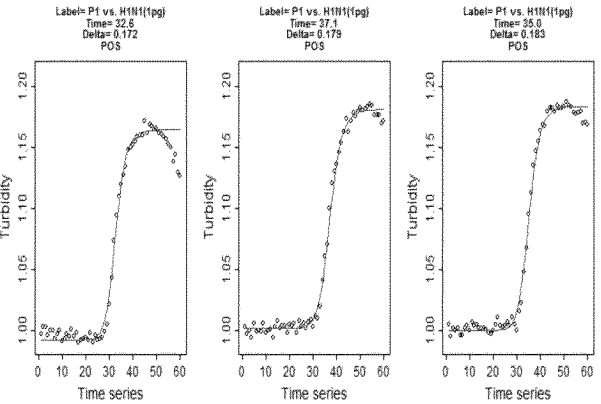
H1N1 Assay (Specificity)

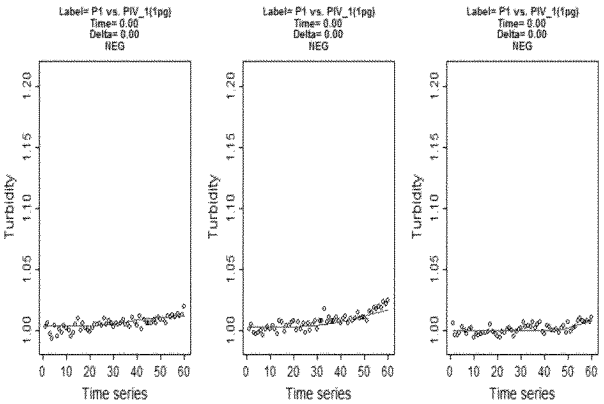


	H1N1 Assay Results	
	H1N1 Positive	H1N1 Negative
H1N1 sample	100% (60/60)	0% (32/32)
Cross-reactivity (24 species)	0% (0/96)	100% (96/96)

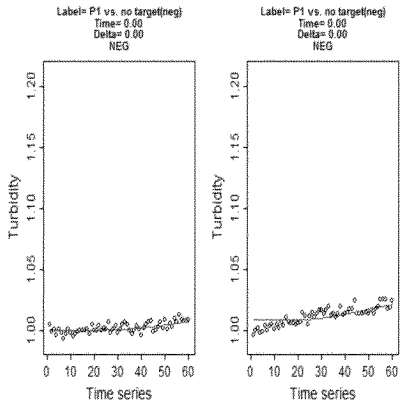
H1N1 assay with H1N1 sample



H1N1 assay with PIV sample



H1N1 assay with no sample



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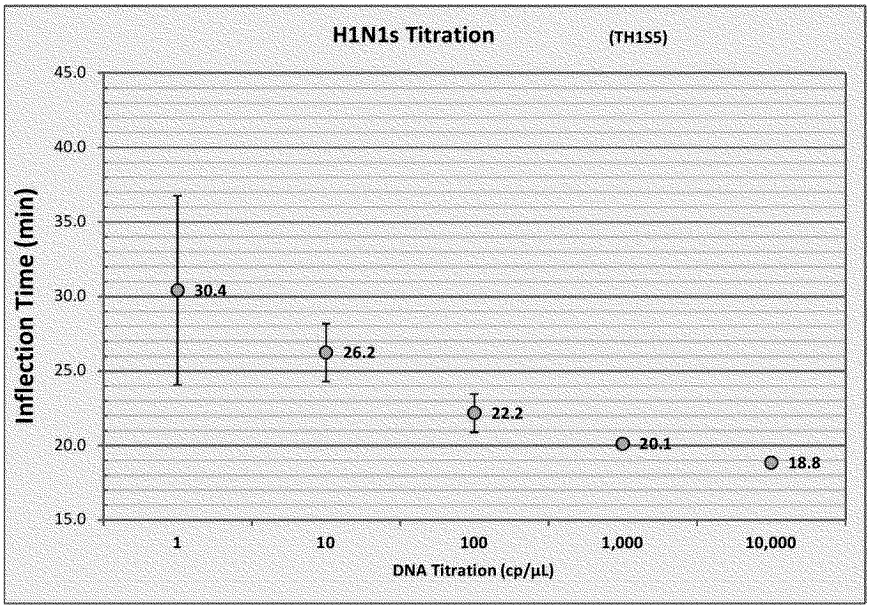
H1N1 Assay (Sensitivity)

H1N1 Assay

Performance Test	Inflection Time (min) Mean	SD (1)
Negative	No Amp	nd
Positive (1 pg)		
TH1S5	19.9	0.3
Titration w/ TH1S5 (cp/µL)		
10,000	18.8	0.1
1,000	20.1	0.1
100	22.2	1.3
10	26.2	2.0
1	30.4	6.4



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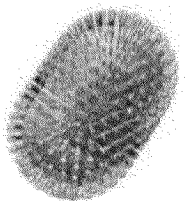
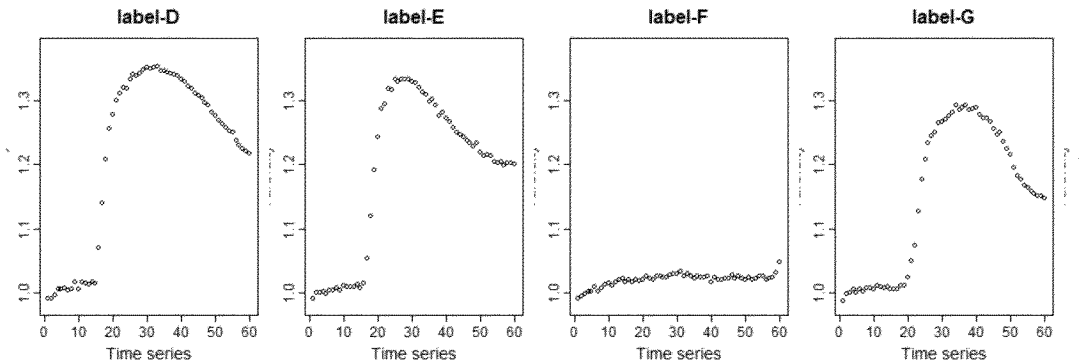
H3N2 Brisbane strain (inactivated virus)



H3N2 assay with H3N2 sample **Negative Control** **Positive Control**



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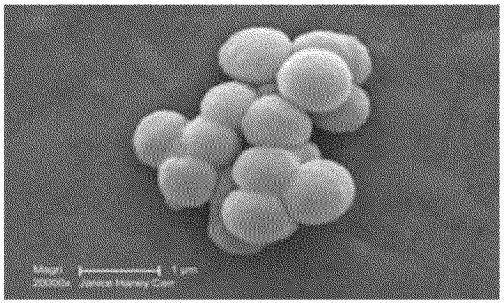
Strep A (inactivated bacteria)



Strep A Assay

Performance Test	Mean
Negative	No Amp

Extract (cp/µL)	(min)
800	24.0
80	28.3
8	40.7

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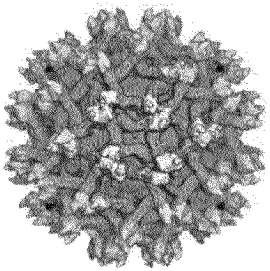
Dengue Virus (RNA extracts)



		Dengue Assay Results		
		Dengue 1	Dengue 2	Dengue 3
Sample	Dengue 1	Positive 100% (24/24)	Negative 100% (16/16)	Negative 100% (16/16)
	Dengue 2	Negative 100% (16/16)	Positive 100% (24/24)	Negative 100% (16/16)
	Dengue 3	Negative 100% (16/16)	Negative 100% (16/16)	Positive 100% (24/24)

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Theranos Dengue Assays Testing with Synthetic RNA Targets

Theranos primers were verified to perform well against intended pathogen Dengue targets with no cross reactivity.
Theranos Dengue assays detect Dengue 1, 2, 3 and 4 with good specificity.

Dengue Amplification/Cross Reactivity Table at 10K copies/uL

Dengue	Assay 1	Assay 2	Assay 3	Assay 4
Sample 1	Yes	No	No	No
Sample 2	No	Yes	No	No
Sample 3	No	No	Yes	No
Sample 4	No	No	No	Yes