January 10, 2025

Inflammatix, Inc.
Diana Lane
VP, Quality Assurance and Regulatory Affairs
540 Oakmead Pkwy.
Sunnyvale, California 94085

Re: K241676
Trade/Device Name: TriVerity
Regulation Number: 21 CFR 866.3215
Regulation Name: Device To Detect And Measure Non-Microbial Analyte(s) In Human Clinical Specimens To Aid In Assessment Of Patients With Suspected Sepsis
Regulatory Class: Class II
Product Code: PRE, OOI
Dated: December 9, 2024
Received: December 9, 2024

Dear Diana Lane:

We have reviewed your section 510(k) premarket notification of intent to market the device referenced above and have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (the Act) that do not require approval of a premarket approval application (PMA). You may, therefore, market the device, subject to the general controls provisions of the Act. Although this letter refers to your product as a device, please be aware that some cleared products may instead be combination products. The 510(k) Premarket Notification Database available at https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfpmn/pmn.cfm identifies combination product submissions. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration. Please note: CDRH does not evaluate information related to contract liability warranties. We remind you, however, that device labeling must be truthful and not misleading.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 898. In addition, FDA may publish further announcements concerning your device in the Federal Register.

Additional information about changes that may require a new premarket notification are provided in the FDA guidance documents entitled "Deciding When to Submit a 510(k) for a Change to an Existing Device" (https://www.fda.gov/media/99812/download) and "Deciding When to Submit a 510(k) for a Software Change to an Existing Device" (https://www.fda.gov/media/99785/download).

Your device is also subject to, among other requirements, the Quality System (QS) regulation (21 CFR Part 820), which includes, but is not limited to, 21 CFR 820.30, Design controls; 21 CFR 820.90, Nonconforming product; and 21 CFR 820.100, Corrective and preventive action. Please note that regardless of whether a change requires premarket review, the QS regulation requires device manufacturers to review and approve changes to device design and production (21 CFR 820.30 and 21 CFR 820.70) and document changes and approvals in the device master record (21 CFR 820.181).

Please be advised that FDA's issuance of a substantial equivalence determination does not mean that FDA has made a determination that your device complies with other requirements of the Act or any Federal statutes and regulations administered by other Federal agencies. You must comply with all the Act's requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Part 801 and Part 809); medical device reporting (reporting of medical device-related adverse events) (21 CFR Part 803) for devices or postmarketing safety reporting (21 CFR Part 4, Subpart B) for combination products (see https://www.fda.gov/combination-products/guidance-regulatory-information/postmarketing-safety-reporting-combination-products); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820) for devices or current good manufacturing practices (21 CFR Part 4, Subpart A) for combination products; and, if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR Parts 1000-1050.

All medical devices, including Class I and unclassified devices and combination product device constituent parts are required to be in compliance with the final Unique Device Identification System rule ("UDI Rule"). The UDI Rule requires, among other things, that a device bear a unique device identifier (UDI) on its label and package (21 CFR 801.20(a)) unless an exception or alternative applies (21 CFR 801.20(b)) and that the dates on the device label be formatted in accordance with 21 CFR 801.18. The UDI Rule (21 CFR 830.300(a) and 830.320(b)) also requires that certain information be submitted to the Global Unique Device Identification Database (GUDID) (21 CFR Part 830 Subpart E). For additional information on these requirements, please see the UDI System webpage at https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-assistance/unique-device-identification-system-udi-system.

Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21 CFR 807.97). For questions regarding the reporting of adverse events under the MDR regulation (21 CFR Part 803), please go to https://www.fda.gov/medical-devices/medical-device-safety/medical-device-reporting-mdr-how-report-medical-device-problems.

For comprehensive regulatory information about medical devices and radiation-emitting products, including information about labeling regulations, please see Device Advice (https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-assistance) and CDRH Learn (https://www.fda.gov/training-and-continuing-education/cdrh-learn). Additionally, you may contact the Division of Industry and Consumer Education (DICE) to ask a question about a specific regulatory topic. See the DICE website (https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-

assistance/contact-us-division-industry-and-consumer-education-dice) for more information or contact DICE by email (DICE@fda.hhs.gov) or phone (1-800-638-2041 or 301-796-7100).

Sincerely,

Bryan M. Grabias -S
Digitally signed by Bryan M. Grabias -S
Date: 2025.01.10 15:35:43 -05'00'

Bryan Grabias, Ph. D.
Acting Branch Chief
Bacterial Respiratory and Medical Countermeasures Branch
Division of Microbiology Devices
OHT7: Office of In Vitro Diagnostics
Office of Product Evaluation and Quality
Center for Devices and Radiological Health

Enclosure

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Food and Drug Administration

Indications for Use

Form Approved: OMB No. 0910-0120
Expiration Date: 07/31/2026
See PRA Statement below.

510(k) Number *(if known)*
K241676

Device Name
TriVerity

Indications for Use *(Describe)*
The TriVerity test is an automated, semi-quantitative in vitro diagnostic test that measures the relative expression levels of host response genes in RNA isolated from whole blood collected in the PAXgene Blood RNA tube using reverse transcription loop-mediated isothermal amplification (RT-LAMP) on the Myrna instrument.

The TriVerity test is indicated for use in conjunction with clinical assessments and other laboratory findings as an aid to differentiate bacterial infections, viral infections, and non-infectious illness, as well as to determine the likelihood of 7-day need for mechanical ventilation, vasopressors, and/or renal replacement therapy in adult patients with suspected acute infection or suspected sepsis presenting to the emergency department.

The test generates three scores that each fall within one of five discrete interpretation bands based on the increasing likelihood of
1) bacterial infection,
2) viral infection, and
3) severe illness, as defined by the need for mechanical ventilation, vasopressors, and/or renal replacement therapy (RRT) within seven days.

Type of Use *(Select one or both, as applicable)*

☒ Prescription Use (Part 21 CFR 801 Subpart D) ☐ Over-The-Counter Use (21 CFR 801 Subpart C)

CONTINUE ON A SEPARATE PAGE IF NEEDED.

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510(k) SUMMARY

1.0 GENERAL INFORMATION

Submission Date: June 10, 2024

Submitter Information

Submitted by: Inflammatix, Inc.
540 Oakmead Pkwy.
Sunnyvale, CA 94085

Contact Person: Diana Lane
VP, Quality Assurance and Regulatory Affairs
Tel: +1.831.820.7560
Email: dlane@inflammatix.com

2.0 PURPOSE OF SUBMISSION

To obtain a substantial equivalence determination for TriVerity™.

3.0 MEASURAND

Measurement of 29 mRNA host response transcripts and 3 housekeeping transcripts

Host Response Genes		
ANKRD22	*ARG1*	*BATF*
C3AR1	*CD163*	*CEACAM1*
CLEC5A	*CTSL1*	*DEFA4*
HERC5	*HLA-DMB*	*IFI27*
IFI44	*IFI44L*	*IL18R1*
IL1R2	*ISG15*	*JUP*
KCNJ2	*LY86*	*OASL*
OLFM4	*PSMB9*	*RSAD2*
S100A12	*TDRD9*	*TGFBI*
XAF1	*ZDHHC19*	
Housekeeping Genes		
KPNA6	*RREB1*	*YWHAB*

4.0 TYPE OF TEST

Quantitative, Reverse Transcription Loop-mediated Isothermal Amplification (qRT-LAMP)

5.0 APPLICANT

Inflammatix, Inc.

6.0 PROPRIETARY AND ESTABLISHED NAMES

TriVerity™

TriVerity Test

TriVerity Test System

7.0 REGULATORY INFORMATION

Trade Name:	TriVerity™
Regulation:	866.3215 – Device to detect and measure non-microbial analyte(s) in human clinical specimens to aid in assessment of patients with suspected sepsis
Product Code:	PRE – RT-qPCR Assay For mRNA Transcript Immune Biomarkers
Panel:	81 (Microbiology)
Device Class:	Class II

8.0 INTENDED USE/INDICATIONS FOR USE

8.1 Intended Use

See Indications for Use, below.

8.2 Indications for Use

The TriVerity test is an automated, semi-quantitative in vitro diagnostic test that measures the relative expression levels of host response genes in RNA isolated from whole blood collected in the PAXgene Blood RNA tube using reverse transcription loop-mediated isothermal amplification (RT-LAMP) on the Myrna instrument.

The TriVerity test is indicated for use in conjunction with clinical assessments and other laboratory findings as an aid to differentiate bacterial infections, viral infections, and non-infectious illness, as well as to determine the likelihood of 7-day need for mechanical ventilation, vasopressors, and/or renal replacement therapy in adult patients with suspected acute infection or suspected sepsis presenting to the emergency department.

The test generates three scores that each fall within one of five discrete interpretation bands based on the increasing likelihood of

1) bacterial infection,

2) viral infection, and

3) severe illness, as defined by the need for mechanical ventilation, vasopressors, and/or renal replacement therapy (RRT) within seven days.

8.3 Special conditions for use statement(s):

Rx – For Prescription Use Only

8.4 Special instrument requirements:

Myrna instrument

9.0 DEVICE DESCRIPTION

9.1 Device Description:

The TriVerity test is an in vitro diagnostic test for simultaneous amplification and detection of 29 informative host response RNA transcripts and 3 housekeeping transcripts (listed in measurands) using total RNA extracted from human blood. The test has been designed, manufactured, and validated for use on the Myrna instrument. The TriVerity test is performed with a TriVerity cartridge, a single-use, disposable, multi-chambered fluidic cartridge that runs on the Myrna instrument. All processing steps are automated and occur within a TriVerity cartridge, including sample extraction/purification and qRT-LAMP for the detection and relative quantification of the 29 informative host response RNA transcripts and 3 housekeeping transcripts (listed in measurands). All cartridge steps in this process, following the addition of the sample, are fully automated and completely integrated. In approximately 30 minutes, the test generates three scores that each fall within one of five discrete interpretation bands based on the increasing likelihood of

1) bacterial infection,
2) viral infection, and
3) severe illness, as defined by the need for mechanical ventilation, vasopressors, and/or renal replacement therapy (RRT) within seven days.

The specimen used for the TriVerity test is a sample of whole blood collected by venipuncture using the PAXgene blood collection tubes within the PAXgene Blood RNA System (K042613). The cartridge contains all the necessary reagents to perform RNA isolation and subsequent amplification from the sample.

The TriVerity test quantifies the amount of each transcript in the sample based on the detection of fluorescence by the Myrna instrument. The cartridge includes the reagents for reverse transcription and LAMP. All 32 transcripts (and two in cartridge controls) are amplified and quantified. These values are input to two fixed classifiers which output the three separate scores, each with five discrete interpretation bands. The bands reflect monotonically increasing likelihood of bacterial infection, viral infection, and severe illness, as defined by the need for mechanical ventilation, vasopressors, and/or renal replacement therapy (RRT) within seven days.

9.2 Principles of Operation

The TriVerity test performs RNA extraction and isolation, followed by Quantitative Reverse Transcription Loop-mediated Isothermal Amplification (qRT-LAMP) to measure the expression levels of 29 hosts response RNA transcripts and 3 housekeeping RNA transcripts isolated from whole blood. Amplicons generated by the qRT-LAMP process are detected and quantitated by an intercalating fluorescent dye. The test will only run on the Myrna instrument. The expression levels of the 32 RNA transcripts measured are input to two fixed classifiers which output three separate scores, each with five discrete interpretation bands. The bands reflect monotonically increasing likelihood of bacterial infection, viral infection, and severe illness, as defined by the need for mechanical ventilation, vasopressors, and/or renal replacement therapy (RRT) within seven days.

10.0 SUBSTANTIAL EQUIVALENCE

Predicate Device Name: SeptiCyte RAPID

Predicate 510(k) Number: K203748

Comparison with Predicate:

Table 1: Comparison with Predicate

	TriVerity (Proposed Device)	SeptiCyte RAPID (K203748) (Predicate)
Intended Use	The TriVerity test is an automated, semi-quantitative in vitro diagnostic test that measures the relative expression levels of host response genes in RNA isolated from whole blood collected in the PAXgene Blood RNA tube using reverse transcription loop-mediated isothermal amplification (RT-LAMP) on the Myrna instrument. The TriVerity test is indicated for use in conjunction with clinical assessments and other laboratory findings as an aid to differentiate bacterial infections, viral infections, and non-infectious illness, as well as to determine the likelihood of 7-day need for mechanical ventilation, vasopressors, and/or renal replacement therapy in adult patients with suspected acute infection or suspected sepsis presenting to the emergency department. The test generates three scores that each fall within one of five discrete interpretation bands based on the increasing likelihood of 1) bacterial infection, 2) viral infection, and 3) severe illness, as defined by the need for mechanical ventilation, vasopressors, and/or renal replacement therapy (RRT) within seven days.	The SeptiCyte RAPID test is a gene expression assay using reverse transcription polymerase chain reaction to quantify the relative expression levels of host response genes isolated from whole blood collected in the PAXgene Blood RNA Tube. The SeptiCyte RAPID test is used in conjunction with clinical assessments and other laboratory findings as an aid to differentiate infection-positive (sepsis) from infection-negative systemic inflammation in patients suspected of sepsis on their first day of ICU admission. The SeptiCyte RAPID test generates a score (SeptiScore) that falls within one of four discrete Interpretation Bands based on the increasing likelihood of infection positive systemic inflammation. SeptiCyte RAPID is intended for in-vitro diagnostic use on the Biocartis Idylla System.
Indication for Use Population	Patients presenting with suspected acute infection or sepsis in the emergency department	Patients suspected of sepsis on their first day of Intensive Care Unit (ICU) admission
Classification	II	Same
Product Code	PRE	Same
Specimen Type	Whole blood	Same

	TriVerity (Proposed Device)	SeptiCyte RAPID (K203748) (Predicate)
Specimen Collection Tube	PAXgene Blood RNA	Same
Specimen Processing	Automated extraction within the instrument platform	Same
Assay Principle	Quantitative gene expression assay, based on real-time generation of fluorescence from intercalating fluorescent dye during RT-LAMP amplification of nucleic acid templates	Quantitative gene expression assay, based on real-time generation of fluorescence from hydrolysis of dye-quencher hydrolysis probes during cycles of PCR amplification of nucleic acid templates
Detection Technology	Reverse transcription loop-mediated isothermal amplification (RT-LAMP)	Reverse transcription polymerase chain reaction
Analytes	29 mRNA host response genes: ANKRD22, ARG1, BATF, C3AR1, CD163, CEACAM1, CLEC5A, CTSL1, DEFA4, HERC5, HLA-DMB, IFI27, IFI44, IFI44L, IL18R1, IL1R2, ISG15, JUP, KCNJ2, LY86, OASL, OLFM4, PSMB9, RSAD2, S100A12, TDRD9, TGFBI, XAF1, ZDHHC19 3 housekeeping genes: KPNA6, RREB1, YWHAB	Two mRNA transcript immune biomarkers: PLA2G7, PLAC8
Instrument	Myrna instrument	Biocartis Idylla system
Controls	Two internal controls were developed, serving as within-cartridge positive controls. They serve as sample processing and qRT-LAMP controls. The controls are RNA spike in controls from the External RNA Controls Consortium. External controls are not provided with the assay and are not required for assay performance; however, labeling describes their setup and use.	MS2 bacteriophage particles, serving as sample processing control (SPC), i.e., as within-cartridge positive control for both the sample extraction step and the coupled RT-qPCR step. External controls not provided with the assay but are described in labeling with protocols available from sponsor.
Result Output	TriVerity measures the expression levels of 32 mRNA transcripts which are input into two fixed classifiers. The result is three separate scores, each with five discrete interpretation bands. The bands reflect monotonically increasing likelihood of bacterial infection, viral infection, and severe illness, as defined by the need for mechanical ventilation, vasopressors, and/or renal replacement therapy (RRT) within seven days.	SeptiScore, calculated from the expression levels of the two mRNA analytes PLA2G7, PLAC8. The SeptiScore is placed into four discrete bands that describe a monotonically increasing likelihood of sepsis vs. Systemic Inflammatory Response Syndrome (SIRS).

11.0 STANDARD/GUIDANCE DOCUMENTS REFERENCED

- CLSI EP05-A3 – Evaluation of Precision of Quantitative Measurement Procedures; Approved Guideline - Third Edition
- CLSI EP06 – Evaluation of the Linearity of Quantitative Measurement Procedures: A Statistical Approach; Approved Guideline – Second Edition
- CLSI EP07 – Interference Testing in Clinical Chemistry; Approved Guideline – Third Edition
- CLSI EP17-A2 – Evaluation of Detection Capability for Clinical Laboratory Measurement Procedures; Approved Guideline – Second Edition
- CLSI EP25-A – Evaluation of Stability of *In Vitro* Diagnostic Reagents: Approved Guideline
- CLSI EP37 – Supplemental Tables for Interference Testing in Clinical Chemistry (1st Edition)
- ASTM D4169-23 – Standard Practice for Performance Testing of Shipping Containers and Systems
- ASTM F2825-18 – Standard Practice for Climatic Stressing of Packaging Systems for Single Parcel Delivery
- FDA Guidance for the Content of Premarket Submissions for Software Contained in Medical Devices (issued 11 May 2005)

12.0 PERFORMANCE CHARACTERISTICS

12.1 Analytical Performance

a. Reproducibility

Multi-site Reproducibility

A multi-site reproducibility study was conducted at two external sites and one internal site, each equipped with three instruments and multiple operators. The panel of four contrived samples used in the study spanned the range of scores expected from patient samples. Testing was conducted over five days with two runs per day with each panel in triplicate. Each of the two daily runs was performed by a different operator. The expected sample results are summarized in 2. Standard deviation was calculated for each score (Bacterial/Viral/Severity) and for each band (15 bands). The standard deviation measured in each band, and for each overall score was within acceptance criteria.

Table 2: Overview of the Contrived Panel Members for Reproducibility and Precision

Sample	Expected Results
Sample A	Bacterial Result: High Viral Result: Moderate Severity Result: High
Sample B	Bacterial Result: Very High Viral Result: Very Low Severity Result: Very High
Sample C	Bacterial Result: Very Low Viral Result: Very High Severity Result: Very Low
Sample F	Bacterial Result: Very Low Viral Result: Very Low Severity Result: Very Low

Table 3: Summary of results for multi-site reproducibility

Sample	Score Type	Mean Score	Between Day SD	Between Instrument SD	Between Site SD	Reproducibility SD
A	B	38.17	0.00	1.25	1.82	4.91
A	V	22.33	0.00	1.52	1.77	5.21
A	S	37.48	1.35	1.63	0.00	3.65
B	B	47.42	0.00	0.14	0.00	0.75
B	V	6.24	0.59	0.35	0.00	1.91
B	S	48.20	0.00	0.23	0.00	0.84
C	B	1.13	0.05	0.16	0.07	0.51
C	V	49.10	0.18	0.18	0.00	0.40
C	S	6.86	0.00	0.65	0.00	1.56
F	B	3.49	0.23	0.23	0.19	0.84
F	V	3.17	0.00	0.44	0.00	1.01
F	S	8.89	0.00	0.00	0.00	2.55

Intra-Site Precision

Precision was assessed using a total of 138 evaluable clinical samples covering all score bands and score types, with at least 15 results in every score band. Each clinical sample was measured consecutively in duplicate within the same instrument and using the same cartridge lot in the same laboratory. The study was performed over 5 days using 3 different cartridge lots and 12 different instruments. The standard deviation (SD) was calculated for each score (Bacterial/Viral/Severity) and for each band (15 bands). The SD measured in each band, and for each overall score was within acceptance criteria. The overall SD for bacterial, viral, and severity scores were 2.71, 2.89, and 2.93, respectively:

Table 4: Precision measured using replicates of clinical samples

Band	Imprecision SD (N=138)		
	Bacterial	Viral	Severity
1	1.59	1.44	1.72
2	3.21	4.32	3.89
3	2.90	3.56	3.61
4	3.69	3.58	2.92
5	1.22	0.85	1.38
Overall	2.71	2.89	2.93

Lot-to-lot Reproducibility

The lot-to-lot reproducibility of the TriVerity test score was assessed using a consistent measurement procedure, instrument, operator, operating conditions, and location to obtain measurements of the same sample using three different cartridge lots (Lot A, Lot B, Lot C) with varied lots of reagent formulation of critical reagents. For each contrived sample level (A, B, C, F), a single Myrna instrument was used to run sample replicates in cartridges with alternating runs for each lot, resulting in a total of six replicates per lot/sample level. This design was applied to all four contrived sample levels to characterize the reproducibility of the different score bands across different cartridge lots. The SDs measured for each score and sample type were within acceptance criteria.

Table 5: Lot-to-Lot Reproducibility Results

Sample	Score	Mean Score	Between Lot SD	Overall SD
Sample A	Bacterial	33.56	0.0	4.7
	Viral	27.33	0.0	3.5
	Severity	37.5	1.1	2.7
Sample B	Bacterial	47.61	0.0	0.8
	Viral	6.28	0.0	1.8
	Severity	47.94	0.0	0.6
Sample C	Bacterial	1.00	0.0	0.0
	Viral	49.17	0.0	0.4
	Severity	7.33	0.4	1.2
Sample F	Bacterial	3.33	0.0	0.5
	Viral	3.94	0.0	0.7
	Severity	9.33	1.0	2.5

Repeatability

TriVerity test score repeatability was assessed using the same measurement procedure, the same operator, the same measuring system, the same operating conditions, and the same location to obtain replicate measurements of the same object over a period of 12 (nonconsecutive) days. For each contrived sample level (Samples A, B, C, F), a single Myrna instrument was used to measure cartridges from a single cartridge lot per sample level, with duplicate runs in the morning and duplicate runs in the afternoon. This design

was applied to all 4 contrived sample levels to fully test repeatability of the different score bands. The results obtained across all runs for all sample/score combinations met the acceptance criteria.

Table 6: Repeatability Study Results

Sample	Score	Mean Score	Repeatability SD
Sample A	Bacterial	24.9	4.99
	Viral	32.0	3.97
	Severity	36.6	4.66
Sample B	Bacterial	45.9	1.06
	Viral	10.4	3.23
	Severity	47.9	0.89
Sample C	Bacterial	0.5	0.50
	Viral	49.8	0.38
	Severity	7.2	1.21
Sample F	Bacterial	3.2	0.43
	Viral	3.3	0.88
	Severity	8.1	1.76

b. Traceability, Stability, Expected Values (Controls, Calibrators, or Methods):

Real-time Reagent Stability

Real-time stability studies are ongoing to support product claims for room temperature storage (15-30°C).

PAXgene Sample Collection/Handling

A specimen stability study was conducted to confirm the equivalence of TriVerity results on the Myrna instrument from paired fresh PAXgene Blood RNA samples (run within 1 hour of collection) compared to the PAXgene Blood RNA samples stored at room temperature for 24 hours and the same blood sample stored frozen at -80 °C for 24 hours followed by a thaw cycle. The scores of 60 patient samples were compared when fresh after collection (T0), after 24 hours at room temperature (T1) and when subsequently frozen at -80 °C for 24 hours (T2). The results met acceptance criteria on mean score shift(bias) of T1 and T2 relative to T0.

Additionally, a specimen stability study was conducted to confirm fresh specimen stability between 0 and 12 hours under real-time storage conditions. The study was conducted with fresh PAXgene Blood RNA samples from 16 healthy volunteers. The study compared scores from paired fresh PAXgene Blood RNA samples (run within 1 hour of collection, T0) to the PAXgene Blood RNA samples stored at each of 15 °C and 25 °C for 2 hours (T1), 12 hours (T2), and 14 hours (T3) post-collection. The results met acceptance criteria on mean score shift (bias) of T1, T2, and T3 relative to T0 at both tested temperatures.

These data support TriVerity testing immediately after blood draw, up to 12 hours after blood draw (our recommended testing window with a significant safety factor) or after sample processing according to the manufacturer instructions for the PAXgene sample tube.

Shipping Stability

Shipping studies were conducted for both the TriVerity cartridges and the Myrna instrument. Control tests were run on cartridges prior to conditioning or simulated ship testing. Cartridge shippers were then pre-conditioned per ASTM F2825-18 prior to ship testing. Cartridge and instrument shippers were subjected to simulated ship testing per ASTM D4169:23, Distribution Cycle 13 (DC-13), with assurance level II. There was no impact on cartridge or instrument performance after testing.

c. Linearity

Linearity is not applicable to scores because scores are determined by logistic regression models. Individual marker linearity was assessed using serial dilutions of pure in vitro transcribed RNA sequences (IVT) corresponding to each of the 32 markers that are measured in the TriVerity test. The TriVerity test was found to be linear for all 32 markers at all RNA

input amounts tested, from $1x10^6$ copies/mL to $1x10^9$ copies/mL, considering an Allowable Deviation for Linearity (ADL) of 5%. The results validated the reportable dynamic range.

Table 7: Linearity Study Results

Linearity testing, $1x10^6$ copies/mL to $1x10^9$ copies/mL				
Gene	**slope**	**intercept**	**Pearson**	**ADL 5%**
ANKRD22	-1.65	27.61	0.989	Pass
ARG1	-1.91	31.19	0.985	Pass
BATF	-2.03	35.08	0.988	Pass
C3AR1	-1.88	31.14	0.993	Pass
CD163	-1.61	27.66	0.993	Pass
CEACAM1	-2.10	35.61	0.981	Pass
CLEC5A	-1.78	30.00	0.979	Pass
CTSL1	-2.06	33.66	0.997	Pass
DEFA4	-1.85	30.31	0.996	Pass
HERC5	-1.97	32.63	0.982	Pass
HLA-DMB	-2.36	39.00	0.995	Pass
IFI27	-1.84	32.00	0.980	Pass
IFI44	-1.85	30.30	0.994	Pass
IFI44L	-2.55	41.69	0.996	Pass
IL18R1	-1.85	30.33	0.993	Pass
IL1R2	-2.95	40.95	0.961	Pass
ISG15	-1.74	30.82	0.996	Pass
JUP	-2.03	34.26	0.990	Pass
KCNJ2	-1.84	30.55	0.996	Pass
KPNA6	-1.89	31.37	0.995	Pass
LY86	-1.73	28.66	0.995	Pass
OASL	-1.57	27.59	0.982	Pass
OLFM4	-2.41	37.80	0.991	Pass
PSMB9	-2.06	34.37	0.989	Pass
RREB1	-2.15	34.02	0.991	Pass
RSAD2	-1.84	33.40	0.961	Pass
S100A12	-2.52	40.38	0.995	Pass
TDRD9	-2.06	32.94	0.977	Pass
TGFBI	-2.10	35.75	0.989	Pass
XAF1	-2.20	35.77	0.986	Pass
YWHAB	-2.95	43.84	0.943	Pass
ZDHHC19	-2.06	34.41	0.974	Pass

d. Analytical Sensitivity

Analytical sensitivity was evaluated using IVT corresponding to each of the 32 markers at concentrations ranging from $1x10^5$ copies/mL to $1x10^6$ copies/mL per concentration and evaluating amplification. The study was executed by a single operator over 3 days with 3 instruments used for testing 20 replicates per concentration. Testing was performed in descending order, from the highest concentration sample to the lowest. Analytical sensitivity was determined to be $1x10^6$ cp/mL which was defined as the lowest concentration at which 95% (19/20) samples for each individual marker tested showed measurable amplification.

Table 8: Analytical Sensitivity Results

		% Amplification		
	Gene	T6 $1x10^6$	T7 $5x10^5$	T8 $1x10^5$
1	ANKRD22	100	100	95
2	ARG1	100	100	95
3	BATF	100	100	95
4	C3AR1	100	100	95
5	CD163	100	100	95
6	CEACAM1	100	100	95
7	CLEC5A	100	100	95
8	CTSL1	100	100	100
9	DEFA4	100	100	95
10	ERCC17	100	100	100
11	ERCC59	100	100	100
12	HERC5	100	100	95
13	HLA-DMB	100	100	90
14	IFI27	100	100	90
15	IFI44	100	100	95
16	IFI44L	100	100	90
17	IL18R1	100	100	95
18	IL1R2	100	90	40
19	ISG15	100	100	95
20	JUP	100	100	95
21	KCNJ2	100	100	95
22	KPNA6	100	100	100
23	LY86	100	100	95
24	OASL	100	100	95
25	OLFM4	100	100	95
26	PSMB9	100	100	95
27	RREB1	100	100	95
28	RSAD2	100	100	95
29	S100A12	100	100	90
30	TDRD9	100	100	90
31	TGFBI	100	100	95
32	XAF1	100	100	80
33	YWHAB	100	100	95
34	ZDHHC19	100	100	95
		PASS	**FAIL**	**FAIL**

e. Detection limits

Two clinical sample pools were created to give adequate representation of TriVerity scores across the score range. The clinical pools were created by combining individual clinical samples stored in PAXgene tubes, with white blood cell (WBC) counts of 1995 cells/µL for Pool A and 1296 cells/µL for Pool B. The pools were measured undiluted in 10 replicates and then diluted using leukoreduced blood successively down to the equivalent to 125 cells/µL or 108 cells/µL and measured in 20 replicates.

Limit of Blank

Leukoreduced blood was used as a blank. Ten replicates of Leukoreduced blood were tested and none provided any valid result (0/10 valid results).

Limit of Detection

For each pool, the LoD was defined as the lowest WBC concentration for which at least 95% (19/20) replicates generate scores. The final LoD was the higher of the LoDs determined for each individual pool.

Limit of Quantitation

For each pool, the LoQ was defined as the lowest WBC concentration for which at least 95% of WBC replicates generate scores with a standard deviation of 5.50 or less. The final LoQ was the higher of the LoQs determined for each individual pool. As two different clinical pools were used, the highest LoD/LoQ from each pool was chosen as the overall LoQ/LoQ. The LoQ and the LoD are 500 cells/µL (rounded up from 499 cells/µL).

Table 9: LoD and LoQ results

Sample ID	Cells/µL	N	Mean Score			Score SD			% Valid Runs	LoD/ LoQ
			Bac	Viral	Sev	Bac	Viral	Sev		
Leukoreduced blood	N/A	10	N/A	N/A	N/A	N/A	N/A	N/A	0%	Below LoD/ LoQ
Pool A	1995	10	15.30	42.30	12.80	2.8	1.3	3.8	100%	Above LoD/ LoQ
	499	20	16.10	38.50	11.29	4.1	4.4	3.3	100%	Lod/LoQ
	374	20	13.89	38.50	11.50	2.8	3.7	4.9	90%	Below LoD/ LoQ
	249	20	12.82	36.59	10.41	3.3	5.1	5.8	89%	Below LoD/ LoQ
	125	20	13.08	29.08	10.58	3.0	7.4	4.3	60%	Below LoD/ LoQ
Pool B	1296	10	45.70	7.20	42.00	1.2	1.6	3.4	100%	Above LoD/ LoQ
	432	20	44.40	8.35	39.80	1.4	1.9	2.7	100%	Above LoD/ LoQ
	324	20	44.19	8.95	40.24	1.0	1.8	3.0	100%	Above LoD/ LoQ
	216	20	42.53	11.37	36.42	2.3	3.3	4.7	95%	Lod/LoQ
	108	20	38.85	13.54	30.38	4.6	5.5	6.6	65%	Below LoD/ LoQ

f. Analytical Specificity

Cross Reactivity

Cross-reactivity and non-specific amplification of genomic DNA (gDNA) as well as no amplification from no-template controls (NTC) were evaluated for the TriVerity test.

Cross-reactivity was assessed by spiking 10 ng/µL of gDNA into two levels of contrived samples with previously characterized score results and comparing them with unspiked samples, with six test runs and six control runs. The gDNA-spiked sample runs were compared with control runs by calculating the mean result for each of the three scores for spiked and control samples. The standard deviation for both conditions and sample levels were calculated, and no cross-reactivity was observed.

Genomic gDNA non-specific amplification was evaluated by spiking 20 ng/µL of gDNA into RNA stabilization buffer, resulting in a total of 20 runs. None observed.

All 20 test runs (100%) with no template showed no amplification signal from 20 ng/µL human genomic DNA template.

Endogenous and Exogenous Interferents

Based on the CLSI Guidance EP07, "Interference Testing in Clinical Chemistry" the TriVerity test was evaluated in the presence of interfering substances. A specimen panel was prepared by spiking potential interferents into each of two contrived panel members B and C (see Table 2). The potential interferents were dissolved in appropriate solvents, and then spiked into the contrived samples at concentrations higher than the maxima of their normal or expected clinical reference ranges. Each substance was added to a blood sample in a PAXgene Blood RNA tube. Each interfering substance was spiked into four tubes of both panel types and tested with two different cartridge lots, resulting in a total of eight tests per interfering substance. No interference was found for any of the substances in Table 10 at the concentration listed.

Table 10: Endogenous and Exogenous Interferences Tested

Interferent	Concentration in PAXgene Blood RNA Tube (pre-RNA extraction)	Equivalent Concentration in Whole blood (*)
Bilirubin	400 mg/L	1504 mg/L
Hemoglobin	10 g/L	37.6 g/L
Rheumatoid Factor	45 U/mL	169.2 U/mL
Triglycerides	2000 mg/dL	7520 mg/dL
Albumin	5 g/dL	18.8 g/dL
Heparin	10 u/mL	37.6 U/mL
Imipenem/Cilastatin	100 mg/L	376 mg/L
Vancomycin	100 mg/L	376 mg/L
Cefotaxime	400 mg/L	1504 mg/L
Dopamine	500 mg/dL	1880 mg/dL
CRP (c-reactive protein)	60 mg/L	225.6 mg/L
Norepinephrine	670 µmol/L	2519.2 µmol/L
Dobutamine	11.2 mg/L	42.1 mg/L
Furosemide	59.9 mg/L	225.2 mg/L
IL-6 (Interleukin-6)	2000 pg/mL	7520 pg/mL
sCD14	5 µg/mL	18.8 µg/mL
LPS (Lipopolysaccharides)	5 ng/mL	18.8 ng/mL

(*) Considering a standard mixture of 2.5mL of whole blood in 6.9mL of PAXgene solution.

Carryover

Carryover contamination was investigated using three contrived Panel members B, C, and F (see Table 2) that were tested with 3 instruments across 2 days with 10 runs per instrument per day. Tests were performed in sequence alternating Panel members and scores were evaluated in terms of bias and imprecision when compared with control conditions. No substantial bias or imprecision were observed and therefore, no carryover or amplicon contamination.

g. Assay Reportable Range

See linearity above.

h. Assay Cut-Off

See clinical cut-off (Section 3b) below.

12.2 Comparison Studies

a. Method Comparison with Predicate Device:

N/A

b. Matrix Comparison

N/A

12.3 Clinical Studies

a. Clinical Sensitivity and Clinical Specificity

A prospective, multi-center clinical study (SEPSIS-SHIELD; NCT04094818) was conducted to establish the performance characteristics of the TriVerity test on the Myrna instrument. This was a non-interventional, minimal-risk study to analyze gene expression and other laboratory data from biological samples collected from participants with suspected respiratory, urinary, intra-abdominal, skin and soft tissue, meningitis/encephalitis, and at least one vital sign change, and other acute infections, or suspected sepsis of any cause with at least two vital sign changes and a blood culture order.

Study sites included emergency departments (EDs) of community and academic hospitals located in twenty-one geographically diverse locations throughout the United States plus one site in Europe. Enrollment was offered to all patients who met the enrollment criteria at presentation to the ED. Of the 1,441 participants who consented to the study, there were 1,222 evaluable participants.

The primary objective of the study was to evaluate the performance of the TriVerity test for (1) diagnosing bacterial and viral infections using consensus and forced clinical adjudication as the comparator and (2) evaluate the performance of the TriVerity test for predicting severe illness (defined as the need for mechanical ventilation, vasopressors, or renal replacement therapy [RRT] within 7 days) using clinical outcomes as the comparator.

The analysis population consisted of all participants who provided consent, met all inclusion criteria, met no exclusion criteria, and had their PAXgene blood sample collected and successfully processed (resulting in three TriVerity scores). The overall analysis population was further divided into diagnostic and prognostic analysis populations with additional requirements. The diagnostic endpoint analysis population included participants who had a completed adjudication for bacterial and viral infection to determine the ground truth. The diagnostic population was further classified as Consensus (only contains participants with a certain (Yes or No) or Forced adjudication (all patients adjudicated as Yes and/or Probable vs. No and/or Unlikely). The prognostic endpoint analysis population included participants who had information available on the presence of severe illness (acute need for mechanical ventilation, vasopressor and/or renal replacement therapy) within 7 days.

Each of the bands for the TriVerity test were assessed in terms of likelihood ratio, Positive Percent Agreement (PPA), Negative Percent Agreement (NPA), and predictive values (post-test probabilities). The calculation of PPA and NPA estimates considered each cutoff independently to assign True Positive, True Negative, False Positive, and False negative status to each assay result.

Among 1,441 participants who consented, 188 (13.0%) were excluded due to not meeting the inclusion criteria, meeting exclusion criteria (screen failures), or withdrawals during the study. There were 31 (2.2%) participants without valid TriVerity results. A total of 1,222 participants were evaluable for the diagnostic endpoint (accuracy of the TriVerity test for the identification of bacterial and viral infections) and 1,120 participants were evaluable for the prognostic endpoint (prediction of need for mechanical ventilation, vasopressor use, and/or RRT within 7 days).

Using forced adjudication, 58.1% bacterial infections, 20.0% viral infections, 2.5% co-infections; 19.4% of participants were adjudicated as noninfected. Consensus adjudication yielded 61.5% of bacterial infections compared to 22.6% viral infections and 1.6% bacterial-viral coinfections; 14.3% of participants were adjudicated to not have an infection. In the prognostic population, 10.9% of participants required mechanical ventilation, vasopressor use, and/or RRT within 7 days (prognostic endpoint).

Participant demographics at the time of presentation in the ED are shown in Table 11. These results demonstrate that a representative cohort of U.S. emergency department patients presenting with suspected acute infection and suspected sepsis was enrolled. The results also demonstrate similar age, sex, race, and ethnicity between the forced and consensus diagnostic populations, as well as between the diagnostic and prognostic populations.

Table 11: Participant Demographics for the Diagnostic and Prognostic Populations

	Population		
	Diagnostic Population: Forced (N=1222)	**Diagnostic Population: Consensus (N=729)**	**Prognostic Population (N=1120)**
Age			
Mean (SD)	50.9 (17.61)	50.6 (17.35)	51.3 (17.62)
Median (Range)	52.0 (18.0, 90.0)	52.0 (18.0, 90.0)	52.0 (18.0, 90.0)
Sex at Birth, n (%)			
Female	605 (49.5%)	345 (47.3%)	544 (48.6%)
Male	617 (50.5%)	384 (52.7%)	576 (51.4%)
Race, n (%)*			
American Indian or Alaska Native	2 (0.2%)	0 (0.0%)	1 (0.1%)
Asian*	11 (0.9%)	6 (0.8%)	8 (0.7%)
Black or African American	360 (29.5%)	223 (30.6%)	321 (28.7%)
Native Hawaiian or Other Pacific Islander	2 (0.2%)	2 (0.3%)	2 (0.2%)
White*	786 (64.3%)	461 (63.2%)	734 (65.5%)
Other	63 (5.2%)	37 (5.1%)	56 (5.0%)
Ethnicity, n (%)			
Hispanic or Latino	135 (11.0%)	97 (13.3%)	128 (11.4%)
Not Hispanic or Latino	1064 (87.1%)	623 (85.5%)	972 (86.8%)
Unknown	23 (1.9%)	9 (1.2%)	20 (1.8%)

*Note: Two patients gave their race as biracial (Asian, White), added to forced and prognostic population.

Table 12 shows medical history and immune status of participants. Results obtained are representative of a U.S. emergency department cohort presenting with suspected acute infection and suspected sepsis; we did not observe marked differences in the distribution of underlying diseases and immune status in the different study populations (prognostic vs. forced diagnostic vs. consensus diagnostic populations). Importantly, a total of 219 (17.9%) participants in the forced population were immunosuppressed, among these, 30 fell into more than one of the immunosuppression categories. A total of 206 (18.4%) participants in the prognostic population were immunosuppressed. Among these, 30 participants fell into more than one immunosuppression category.

Table 12: Medical History (A) and Type of Immunosuppression (B) of Participants

A	Population		
Medical History[1]	**Diagnostic Population: Forced (N=1222)**	**Diagnostic Population: Consensus (N=729)**	**Prognostic Population (N=1120)**
Blood Disorders	86 (7.0%)	51 (7.0%)	80 (7.1%)
Cardiovascular Diseases	519 (42.5%)	303 (41.6%)	485 (43.3%)
Kidney Diseases	224 (18.3%)	140 (19.2%)	213 (19.0%)
Gastrointestinal Tract Diseases	284 (23.2%)	167 (22.9%)	265 (23.7%)
Metabolic/Endocrinological Diseases	524 (42.9%)	315 (43.2%)	490 (43.8%)
Musculoskeletal Diseases	177 (14.5%)	106 (14.5%)	167 (14.9%)
Neuropsychiatric Diseases	282 (23.1%)	162 (22.2%)	264 (23.6%)
Respiratory Tract Diseases	380 (31.1%)	229 (31.4%)	350 (31.3%)
Skin or Soft Tissue Diseases	61 (5.0%)	36 (4.9%)	58 (5.2%)
Urogenital Diseases	110 (9.0%)	68 (9.3%)	106 (9.5%)
Other	200 (16.4%)	110 (15.1%)	186 (16.6%)
B	**Population**		
Type of Immunosuppression[2]	**Diagnostic Population: Forced (N=1222)**	**Diagnostic Population: Consensus (N=729)**	**Prognostic Population (N=1120)**
Bone Marrow, Stem Cell and/or Other Cell Transplant	3 (0.2%)	2 (0.3%)	3 (0.3%)
Malignancies	125 (10.2%)	73 (10.0%)	121 (10.8%)
HIV/AIDS	26 (2.1%)	16 (2.2%)	22 (2.0%)
Solid Organ Transplant	35 (2.9%)	27 (3.7%)	34 (3.0%)
Steroid Treatment	34 (2.8%)	17 (2.3%)	30 (2.7%)
Other Immunosuppression	30 (2.5%)	17 (2.3%)	29 (2.6%)

[1] Calculated using provider questionnaire information at time of enrollment
[2] Note: Participants may have more than a single type of immunosuppression

Using clinical adjudication as the reference standard, the accuracy of the bacterial result readouts of the TriVerity test by interpretation band is shown in Table 13 for the forced adjudication population.

Table 13: Accuracy of the TriVerity Test for the Diagnosis of Bacterial Infections in the Forced Population

TriVerity Bacterial Band	Clinically Adjudicated Bacterial Infection (Forced)		LR (80% CI)	PPA (Positive Percent Agreement)	NPA (Negative Percent Agreement)	Relative Frequency of Result (% in Band)	Probability of Bacterial Infection (%)	Probability of No Bacterial Infection (%)
	Yes (N)	No (N)						
Very High	226	28	5.24 (4.19-6.83)	30.5	94.2	20.8	89.0	11.0
High	184	61	1.96 (1.65-2.37)	24.8	87.3	20	75.1	24.9
Moderate	142	97	0.95 (0.82-1.11)	19.2	79.8	19.6	59.4	40.6
Low	157	167	0.61 (0.54-0.69)	78.8	34.7	26.5	48.5	51.5
Very Low	32	128	0.16 (0.12-0.2)	95.7	26.6	13.1	20.0	80.0
Prevalence = 60.6%								

LR, likelihood ratio.

Compared to the bacterial infection status as determined by clinical adjudication, a high NPA and positive likelihood ratio were observed for the Very High interpretation band. Similarly, the High band showed high NPA and likelihood ratio for the diagnosis of a bacterial infection. In addition, TriVerity demonstrated high PPA and low negative likelihood ratio for the Very Low and Low interpretation bands. Lastly, 80.4% of results fell into the clinically actionable Very High, High, Low or Very Low interpretation. At a prevalence of 60.6% for bacterial infections, probabilities for having or not having a bacterial infection in the outer Very High and Very Low interpretation bands were 89.0% and 80.0%, respectively.

Expectedly, higher accuracy results were observed when applying the consensus adjudication as the reference standard to determine the bacterial infection status (Table 14) due to the exclusion of participants with uncertain (Probable and Unlikely) bacterial infection status.

Table 14: Accuracy of the TriVerity Test for the Diagnosis of Bacterial Infections in the Consensus Population

TriVerity Bacterial Band	Clinically Adjudicated Bacterial Infection (Consensus)		LR (80% CI)	PPA (Positive Percent Agreement)	NPA (Negative Percent Agreement)	Relative Frequency of Result (% in Band)	Probability of Bacterial Infection (%)	Probability of No Bacterial Infection (%)
	Yes (N)	No (N)						
Very High	165	12	8.04 (5.66-12.43)	35.9	95.5	24.3	93.2	6.8
High	107	25	2.5 (1.97-3.31)	23.3	90.7	18.1	81.1	18.9
Moderate	90	46	1.14 (0.94-1.42)	19.6	82.9	18.7	66.2	33.8
Low	85	92	0.54 (0.45-0.63)	81.5	34.2	24.3	48	52
Very Low	13	94	0.08 (0.05-0.11)	97.2	34.9	14.7	12.1	87.9
Prevalence = 63.1%								

LR, likelihood ratio.

The accuracy of the viral result readout of the TriVerity test by interpretation band is shown in Tables 15 and 16 for the forced and consensus populations. Compared to the viral infection status as determined by clinical adjudication, a high NPA (97.7%) and likelihood ratio (20.04) was observed for the Very High interpretation band. Similarly, the High band showed an NPA of 93.8% and a likelihood ratio of 2.04 for the diagnosis of a viral infection. TriVerity demonstrated a high PPA (88.7%) and a low likelihood ratio (0.25) in the Very Low interpretation band. The Low band showed a PPA of 85.1% and a likelihood ratio of 0.48. Likelihood ratios ranged from 0.25 to 20.04 and increased monotonically from the Very Low to the Very High interpretation band. Lastly, 84.9% of TriVerity viral results fell into the clinically actionable Very High, High, Low and Very Low bands; 20.0% of results fell into the clinically actionable Very High and High interpretation bands whereas 65.0% of results fell into the clinically actionable Very Low and Low interpretation bands; only 15.1% of results were found in the moderate interpretation band.

At a prevalence of 22.5% for viral infections, the positive and negative predictive values of the outer Very High and Very Low interpretation bands were 85.3% and 93.2%, respectively.

Table 15: Accuracy of the TriVerity Test for the Diagnosis of Viral Infections in the Forced Population

TriVerity Viral Band	Clinically Adjudicated Viral Infection (Forced)		LR (80% CI)	PPA (Positive Percent Agreement)	NPA (Negative Percent Agreement)	Relative Frequency of Result (% in Band)	Probability of Viral Infection (%)	Probability of No Viral Infection (%)
	Yes (N)	No (N)						
Very High	128	22	20.04 (15.45-27.29)	46.5	97.7	12.3	85.3	14.7
High	35	59	2.04 (1.57-2.65)	12.7	93.8	7.7	37.2	62.8
Moderate	40	144	0.96 (0.76-1.18)	14.5	84.8	15.1	21.7	78.3
Low	41	295	0.48 (0.39-0.57)	85.1	31.2	27.5	12.2	87.8
Very Low	31	427	0.25 (0.2-0.31)	88.7	45.1	37.5	6.8	93.2
Prevalence = 22.5%								

LR, likelihood ratio.

Expectedly, higher accuracy TriVerity results were observed when applying the consensus adjudication as the reference standard to determine the viral infection status (Table 16) due to the exclusion of participants with uncertain (Probable and Unlikely) viral infection status.

Table 16: Accuracy of the TriVerity Test for the Diagnosis of Viral Infections in the Consensus Population

TriVerity Viral Band	Clinically Adjudicated Viral Infection (Consensus)		LR (80% CI)	PPA (Positive Percent Agreement)	NPA (Negative Percent Agreement)	Relative Frequency of Result (% in Band)	Probability of Viral Infection (%)	Probability of No Viral Infection (%)
	Yes (N)	No (N)						
Very High	105	8	40.93 (27.73-72.16)	59.3	98.6	15.5	92.9	7.1
High	25	33	2.36 (1.68-3.25)	14.1	94.0	8	43.1	56.9
Moderate	22	79	0.87 (0.64-1.13)	12.4	85.7	13.9	21.8	78.2
Low	17	166	0.32 (0.22-0.41)	90.4	30.1	25.1	9.3	90.7
Very Low	8	266	0.09 (0.05-0.14)	95.5	48.2	37.6	2.9	97.1
Prevalence = 24.3%								

LR, likelihood ratio

Taken together, the results shown above demonstrate that the TriVerity test has very high accuracy for the diagnosis of bacterial and viral infections.

Table 17 shows the accuracy of the TriVerity illness severity results for the prediction of the need for mechanical ventilation, vasopressors, and/or RRT within 7 days. The data demonstrate that the TriVerity test was able to predict the need for mechanical ventilation, vasopressors, and/or RRT within 7 days (the prognostic severity endpoint of the study). The NPA of the Very High and High illness severity interpretation bands for the prediction of severe disease was 98.7% and 86.1%, with likelihood ratios of 11.33 and 2.41, respectively. Conversely, the PPA of the Very Low and Low illness severity bands were 91.8% and 87.7% with likelihood ratios of 0.22 and 0.43, respectively. 79.6% of results were observed in the clinically actionable Very High, High, Very Low, and Low interpretation bands; 18.8% of these in the Very High and High bands, 60.7% in the Low and Very Low bands. At a prevalence of 10.9% severe illness, probabilities of having or not having severe illness were 58.1% and 97.3% for the Very High and Very Low interpretation bands, respectively.

Table 17: Accuracy of the Severity Result Readout of the TriVerity Test for the Prediction of Mechanical Ventilation, Vasopressor Use, and/or Renal Replacement Therapy within 7 days

TriVerity Illness Severity Band	Need for Mechanical Ventilation, Vasopressors, and/or RRT Within 7 Days		LR (80% CI)	PPA (Positive Percent Agreement)	NPA (Negative Percent Agreement)	Relative Frequency of Result (% in Band)	Probability of Severe Illness (%)	Probability of No Severe Illness (%)
	Yes	No						
Very High	18	13	11.33 (7.07-17.75)	14.8	98.7	2.8	58.1	41.9
High	41	139	2.41 (1.96-2.91)	33.6	86.1	16.1	22.8	77.2
Moderate	38	191	1.63 (1.35-1.97)	31.1	80.9	20.4	16.6	83.4
Low	15	288	0.43 (0.3-0.57)	87.7	28.9	27.1	5	95
Very Low	10	367	0.22 (0.14-0.31)	91.8	36.8	33.7	2.7	97.3
Prevalence = 10.9%								

LR, likelihood ratio.

We also determined the accuracy of the three TriVerity test results readouts using AUROCs in Table 18.

Table 18: Area Under the Receiver-Operator Characteristics for the TriVerity Bacterial, Viral, and Severe Illness Results

Population	N	AUROC	Lower 80% CI	Upper 80% CI
Bacterial Infection (Forced Adjudication)	1222	0.76	0.75	0.78
Viral Infection (Forced adjudication)	1222	0.83	0.81	0.85
Bacterial Infection (Consensus Adjudication)	729	0.83	0.81	0.85
Viral Infection (Consensus Adjudication)	729	0.91	0.89	0.93
TriVerity Bacterial or Viral vs. Non-Infected (Forced Adjudication)	1222	0.79	0.78	0.81
TriVerity Bacterial or Viral vs. Non-Infected (Consensus Adjudication)	729	0.85	0.83	0.86
Severe Infection (Prognostic Endpoint)	1120	0.78	0.75	0.81

These results demonstrate the high AUROCs of the TriVerity bacterial (0.83) and viral (0.91) results when using the consensus adjudication. Expectedly, slightly lower results were achieved using the forced adjudication. Similarly, AUROCs for the illness severity results were high (0.78) for the prognostic endpoint.

b. Clinical Cut-Off

TriVerity cut-off values were established prior to the registrational clinical trial (INF-04). PPA and NPA of the outside bands were the primary performance targets with a target goal of:

- "Very Low" Band PPA ≥95%: Minimize the number of false negative patients (patients who would go undetected, hence untreated)
- "Very High" Band NPA ≥95%: Minimize the number of false positive patients (minimize overdiagnosis, leading to unnecessary treatment)

Threshold setting across all bands also considered other clinical performance metrics such as likelihood ratios, moderate band coverage, outer band coverage, and monotonicity and was executed in an iterative fashion.

Illness Severity Score thresholds were set (tuned) using predicted probabilities and ground truths for 399 patient samples collected from Emergency Department settings. Bacterial and Viral Score thresholds were tuned using predicted probabilities and ground truths for 472 patient samples collected from Emergency Department and ICU studies. All tuning studies were independent from the final clinical study (INF-04), were collected in PAXgene blood tubes, and were processed on the Myrna instrument using GMP-grade TriVerity cartridges. See Table 19 for recommended interpretation of results.

Table 19: Recommendations for Interpretation of TriVerity Results: (A) Bacterial Score, (B) Viral Score, (C) Severity Score

A)

Bacterial Score	Result	Interpretation
0-10	Very Low Score	Very low bacterial infection likelihood
11-20	Low Score	Low bacterial infection likelihood
21-30	Moderate Score	Moderate bacterial infection likelihood
31-40	High Score	High bacterial infection likelihood
41-50	Very High Score	Very high bacterial infection likelihood

B)

Viral Score	Result	Interpretation
0-10	Very Low Score	Very low viral infection likelihood
11-20	Low Score	Low viral infection likelihood
21-30	Moderate Score	Moderate viral infection likelihood
31-40	High Score	High viral infection likelihood
41-50	Very High Score	Very high viral infection likelihood

C)

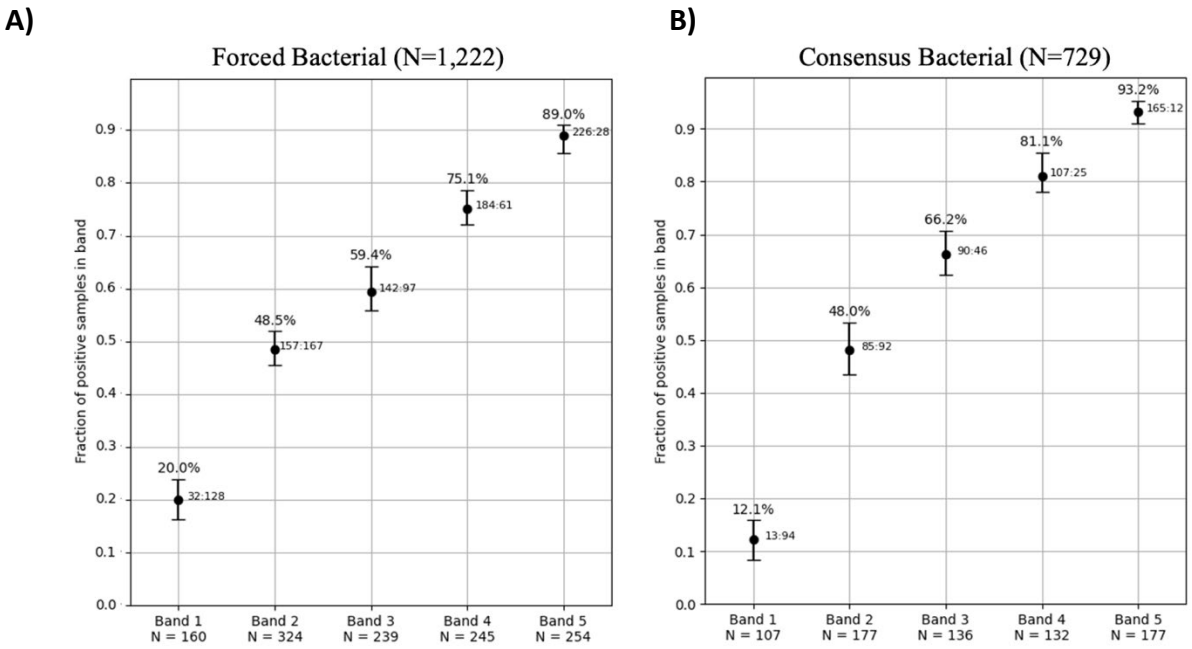
Severity Score	Result	Interpretation
0-10	Very Low Score	Very low 7-day severe illness likelihood
11-20	Low Score	Low 7-day severe illness likelihood
21-30	Moderate Score	Moderate 7-day severe illness likelihood
31-40	High Score	High 7-day severe illness likelihood
41-50	Very High Score	Very High 7-day severe illness likelihood

c. Other Clinical Supporting Data

Secondary and subgroup analyses were performed to demonstrate that accuracy results for the TriVerity test presented above are representative across the entire clinical performance study population and defined patient.

Probabilities of bacterial infection by TriVerity test interpretation band are shown below. Results across the three TriVerity (Bacterial, Viral, and Severity) Score readouts are consistent, indicating a clear relationship between TriVerity scores and increasing likelihoods of bacterial infection, viral infection, and illness severity endpoints across TriVerity interpretation bands. The 80% CIs for non-adjacent bands do not overlap in any of the analyses.

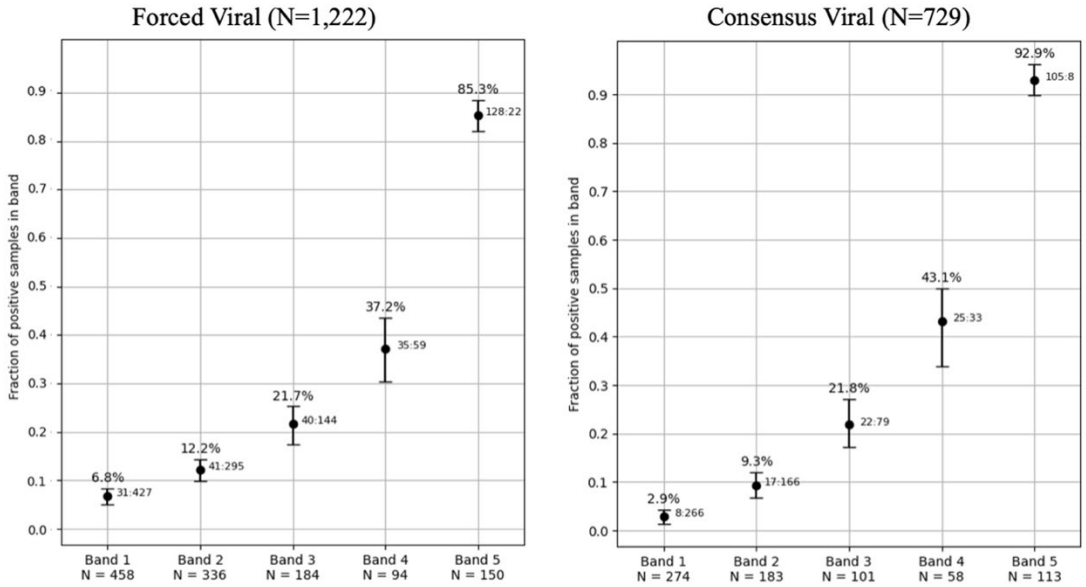
Figure 1: Probabilities of Bacterial Infection by TriVerity Interpretation Band: (A) Forced Population, (B) Consensus Population



Note: Band 1=Very Low, Band 2=Low, Band 3=Moderate, Band4=High, Band 5=Very High.

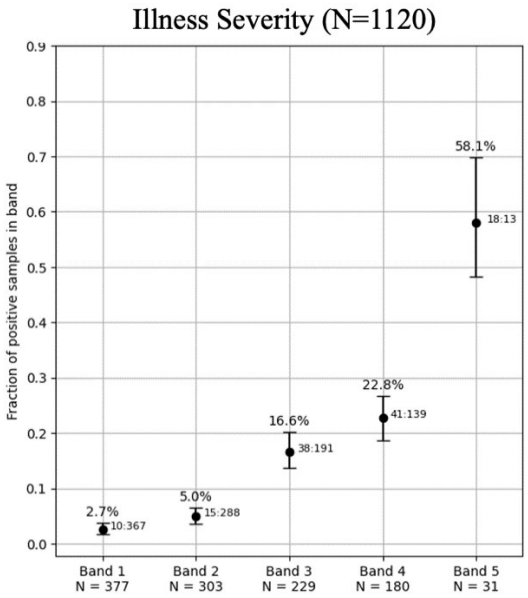
Figure 2: Probabilities of Viral Infection by TriVerity Interpretation Band: (A) Forced Population, (B) Consensus Population

A) **B)**



Note: Band 1=Very Low, Band 2=Low, Band 3=Moderate, Band4=High, Band 5=Very High.

Figure 3: Probabilities of Need of Mechanical Ventilation, Vasopressors, and Renal Replacement Therapy Within 7 Days

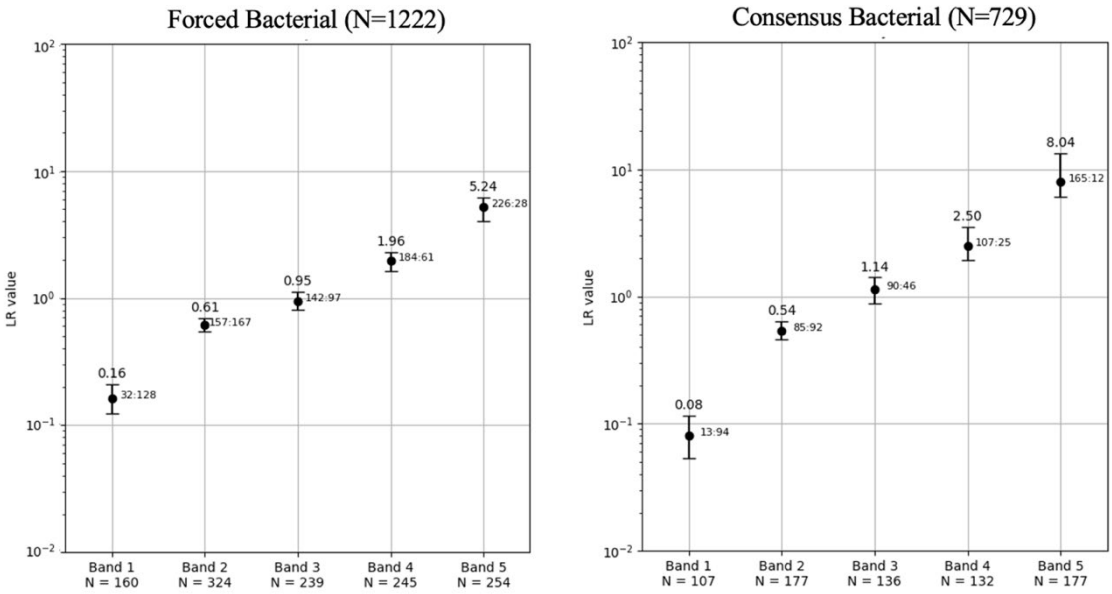


Note: Band 1=Very Low, Band 2=Low, Band 3=Moderate, Band4=High, Band 5=Very High.

Next, we plotted the likelihood ratios and 80% CIs for each interpretation band for the bacterial, viral, and severity result readouts of the TriVerity test. Results across the three TriVerity (bacterial, viral, and illness severity) result readouts are consistent, indicating a clear relationship between TriVerity scores and increasing likelihoods of bacterial infection, viral infection, and illness severity across TriVerity interpretation bands. CIs for non-adjacent bands do not overlap in any of the analyses. Of importance, the point estimates of the band likelihood ratios are monotonically increasing, and the 80% CIs of the likelihood ratios in non-adjacent bands are non-overlapping, for all scores.

Figure 4: Likelihood Ratios for Bacterial Infection by TriVerity Interpretation Band: (A) Forced Cohort, (B) Consensus Cohort

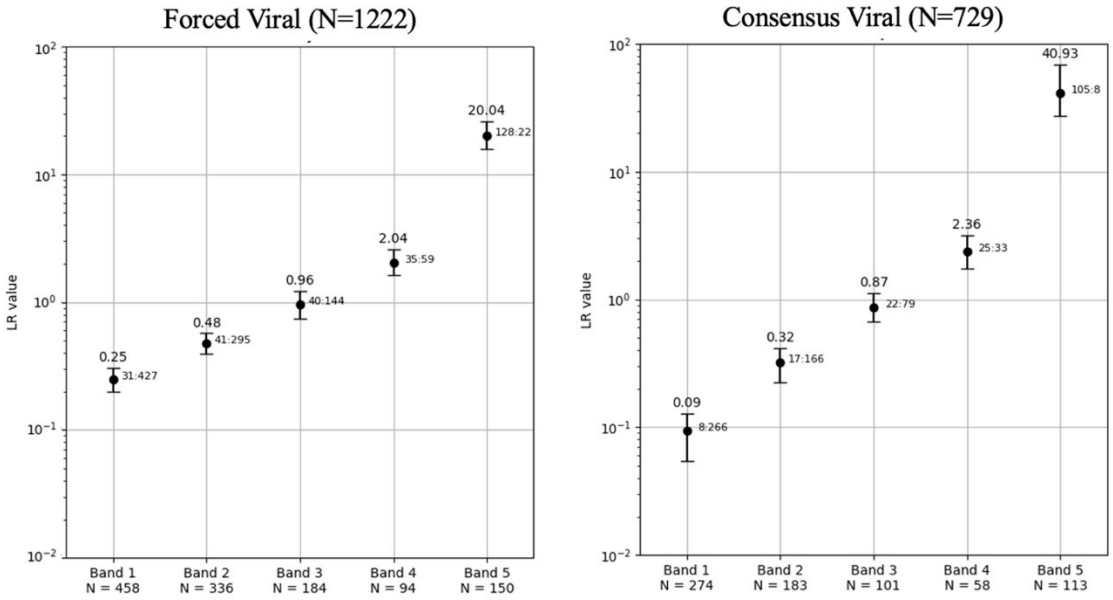
A) **B)**



LR, likelihood ratio; LR is calculated as nominal likelihood on a log scale
Band 1=Very Low, Band 2=Low, Band 3=Moderate, Band 4=High, Band 5=Very High.

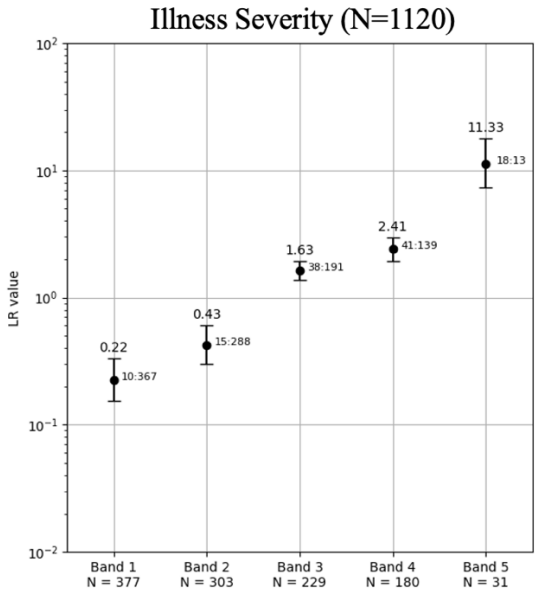
Figure 5: Likelihood Ratios for Viral Infection by TriVerity Interpretation Band: (A) Forced Cohort, (B) Consensus Cohort

A) **B)**



LR, likelihood ratio; LR is calculated as nominal likelihood on a log scale
Band 1=Very Low, Band 2=Low, Band 3=Moderate, Band 4=High, Band 5=Very High.

Figure 6: Likelihood Ratios for Need of Mechanical Ventilation, Vasopressors and Renal Replacement Therapy Within 7 Days by TriVerity Interpretation Band



LR, likelihood ratio; LR is calculated as nominal likelihood on a log scale
Band 1=Very Low, Band 2=Low, Band 3=Moderate, Band 4=High, Band 5=Very High.

Of importance, the point estimates of the band likelihood ratios are monotonically increasing, and the 80% CIs of the likelihood ratios in non-adjacent bands are non-overlapping, for all scores.

The diagnostic accuracy of TriVerity appears superior to that of commonly used diagnostic biomarkers. The AUROC gap between the TriVerity bacterial score and PCT is of major clinical importance and statistically significant. In addition, PCT does not detect non-infectious disease nor severe illness in the ED, whereas TriVerity does.

Table 20: Accuracy of TriVerity Test Results Compared to Biomarkers Expressed as Area Under the Receiver-Operating Characteristics

Result		Comparator Biomarker	N	AUROC	80% CI (lower - upper)
Population/Endpoint	**Diagnostic Results**				
Forced Adjudication	C-Reactive Protein	CRP	1200	0.73	0.71 – 0.75
		TriVerity Bacterial		0.77	0.75 – 0.78
Forced Adjudication	Procalcitonin	PCT	1186	0.69	0.67 – 0.71
		TriVerity Bacterial		0.77	0.75 – 0.79
Forced Adjudication	White Blood Cells	WBC	1179	0.70	0.68 – 0.72
		TriVerity Bacterial		0.76	0.75 – 0.78
Consensus Adjudication	C-Reactive Protein	CRP	714	0.74	0.72 - 0.77
		TriVerity Bacterial		0.83	0.81 – 0.85
Consensus Adjudication	Procalcitonin	PCT	711	0.71	0.68 – 0.73
		TriVerity Bacterial		0.83	0.81 – 0.85
Consensus Adjudication	White Blood Cells	WBC	709	0.76	0.73 – 0.78
		TriVerity Bacterial		0.83	0.81 - 0.85
Population/Endpoint	**Prognostic Results**				
Prognostic Population	Lactate	Lactate	1058	0.76	0.73 - 0.80
		TriVerity Severity	1058	0.78	0.75– 0.80
Prognostic Population	qSOFA	qSOFA	1042	0.78	0.75 - 0.81
		TriVerity Severity	1042	0.78	0.76 – 0.81

Table 21 shows the accuracy of TriVerity bacterial results vs. PCT results stratified by race. TriVerity bacterial results demonstrated markedly superior AUROCs compared to PCT across Whites, African American, and other races using forced and consensus adjudication. AUROCs ranged from 0.76 - 0.86 (forced adjudication) and from 0.82 – 0.91 (consensus adjudication) for the TriVerity bacterial result; for PCT they

ranged from 0.55 - 0.73 (forced adjudication) and from 0.62 – 0.74 (consensus adjudication) across different races; ranges were narrow (max. 0.10) for the TriVerity bacterial results whereas they were markedly wider (max. 0.18) for PCT potentially indicating an impact of race on accuracy of PCT.

Table 21: Accuracy of TriVerity Bacterial Scores Compared to Procalcitonin by Race

Population	Test	Race	N	AUROC	Lower 80% CI	Upper 80% CI
Forced Adjudication	TriVerity Bacterial	Black or African American	352	0.76	0.72	0.79
		Other[1]	76	0.86	0.81	0.91
		White	758	0.76	0.74	0.78
	Procalcitonin	Black or African American	352	0.63	0.59	0.67
		Other[1]	76	0.55	0.47	0.64
		White	758	0.73	0.70	0.75
Consensus Adjudication	TriVerity Bacterial	Black or African American	218	0.83	0.80	0.87
		Other[1]	44	0.91	0.86	0.96
		White	449	0.82	0.79	0.84
	Procalcitonin	Black or African American	218	0.66	0.62	0.71
		Other[1]	44	0.62	0.50	0.73
		White	449	0.74	0.71	0.77

[1] for the calculation of AUROCs, racial groups with <15 participants were merged with “Other”.

These results indicate that TriVerity could substantially improve diagnosis and prognosis of suspected acute infection and sepsis, particularly in minorities where procalcitonin underperforms.

Likelihood ratios and AUROCs for the TriVerity results did not differ markedly based on the presence or absence of immunosuppression (Tables 22-24). Likelihood ratios did not differ markedly between the consensus and forced population. These results indicate that the TriVerity diagnostic results are robust across normal immune status and immunosuppression.

Table 22: Accuracy of Bacterial TriVerity Results by Immunosuppression in the Forced (A) and Consensus (B) Population

A: Forced Adjudication		Clinically Adjudicated Bacterial Infection			
Population	**TriVerity Bacterial Band**	**Yes n (%)**	**No n (%)**	**Likelihood Ratio (80% CI)**	**AUROC**
Immunosuppressed Cohort	Very High	57 (89.06%)	7 (10.94%)	4.33 (2.83-8.13)	0.76
	High	28 (65.12%)	15 (34.88%)	0.99 (0.7-1.47)	
	Moderate	30 (68.18%)	14 (31.82%)	1.14 (0.8-1.73)	
	Low	22 (51.16%)	21 (48.84%)	0.56 (0.39-0.8)	
	Very Low	6 (24.00%)	19 (76.00%)	0.17 (0.08-0.28)	
Immunocompetent Cohort	Very High	169 (88.95%)	21 (11.05%)	5.45 (4.2-7.37)	0.77
	High	156 (77.23%)	46 (22.77%)	2.3 (1.91-2.83)	
	Moderate	112 (57.44%)	83 (42.56%)	0.91 (0.78-1.09)	
	Low	135 (48.04%)	146 (51.96%)	0.63 (0.55-0.71)	
	Very Low	26 (19.26%)	109 (80.74%)	0.16 (0.12-0.20)	

B: Consensus Adjudication		Clinically Adjudicated Bacterial Infection			
Population	**TriVerity Bacterial Band**	**Yes n (%)**	**No n (%)**	**Likelihood Ratio (80% CI)**	**AUROC**
Immunosuppressed Cohort	Very High	42 (93.33%)	3 (6.67%)	5.87 (3.42-18.76)	0.80
	High	17 (70.83%)	7 (29.17%)	1.02 (0.62-1.87)	
	Moderate	18 (75.00%)	6 (25.00%)	1.26 (0.74-2.43)	
	Low	13 (54.17%)	11 (45.83%)	0.5 (0.31-0.82)	
	Very Low	3 (20.00%)	12 (80.00%)	0.1 (0.03-0.21)	
Immunocompetent Cohort	Very High	123 (93.18%)	9 (6.82%)	8.56 (5.88-14.52)	0.83
	High	90 (83.33%)	18 (16.67%)	3.13 (2.36-4.46)	
	Moderate	72 (64.29%)	40 (35.71%)	1.13 (0.9-1.45)	
	Low	72 (47.06%)	81 (52.94%)	0.56 (0.47-0.67)	
	Very Low	10 (10.87%)	82 (89.13%)	0.08 (0.05-0.11)	

Table 23: Accuracy of Viral TriVerity Results by Immunosuppression in the Forced (A) and Consensus (B) Population

A: Forced Adjudication		Clinically Adjudicated Viral Infection			
Population	**TriVerity Viral Band**	**Yes n (%)**	**No n (%)**	**Likelihood Ratio (80% CI)**	**AUROC**
Immunosuppressed Cohort	Very High	21 (84.00%)	4 (16.00%)	20.3 (11.63-51.16)	0.81
	High	7 (30.43%)	16 (69.57%)	1.69 (0.92-2.8)	
	Moderate	4 (12.12%)	29 (87.88%)	0.53 (0.22-0.93)	
	Low	6 (10.91%)	49 (89.09%)	0.47 (0.25-0.74)	
	Very Low	7 (8.43%)	76 (91.57%)	0.36 (0.2-0.54)	
Immunocompetent Cohort	Very High	107 (85.60%)	18 (14.40%)	19.98 (15.26-28.76)	0.84
	High	28 (39.44%)	43 (60.56%)	2.19 (1.61-2.93)	
	Moderate	36 (23.84%)	115 (76.16%)	1.05 (0.83-1.31)	
	Low	35 (12.46%)	246 (87.54%)	0.48 (0.37-0.58)	
	Very Low	24 (6.40%)	351 (93.60%)	0.23 (0.17-0.28)	

B: Consensus Adjudication		Clinically Adjudicated Viral Infection			
Population	**TriVerity Viral Band**	**Yes n (%)**	**No n (%)**	**Likelihood Ratio (80% CI)**	**AUROC**
Immunosuppressed Cohort	Very High	14 (87.50%)	2 (12.50%)	29.96 (13.91-nan)	0.89
	High	4 (40.00%)	6 (60.00%)	2.85 (1.19-6.42)	
	Moderate	2 (10.53%)	17 (89.47%)	0.5 (0.0-1.05)	
	Low	3 (9.38%)	29 (90.63%)	0.44 (0.15-0.79)	
	Very Low	2 (3.64%)	53 (96.36%)	0.16 (0.0-0.3)	
Immunocompetent Cohort	Very High	91 (93.81%)	6 (6.19%)	44.4 (28.72-89.14)	0.91
	High	21 (43.75%)	27 (56.25%)	2.28 (1.56-3.26)	
	Moderate	20 (24.39%)	62 (75.61%)	0.94 (0.66-1.28)	
	Low	14 (9.27%)	137 (90.73%)	0.3 (0.19-0.4)	
	Very Low	6 (2.74%)	213 (97.26%)	0.08 (0.04-0.12)	

A: Consensus Adjudication		Clinically Adjudicated Viral Infection			
Population	**TriVerity Viral Band**	**Yes n (%)**	**No n (%)**	**Likelihood Ratio**	**AUROC**
Immunosuppressed Cohort	Very High	14 (87.50)	2 (12.50)	31.7	0.90
	High	3 (33.33)	6 (66.67)	2.3	
	Moderate	2 (11.11)	16 (88.89)	0.57	
	Low	2 (6.90)	27 (93.10)	0.33	
	Very Low	2 (3.64)	53 (96.36)	0.17	
Immunocompetent Cohort	Very High	91 (93.81)	6 (6.19)	43.0	0.91
	High	21 (44.68)	26 (55.32)	2.3	
	Moderate	19 (23.46)	62 (76.54)	0.87	
	Low	14 (9.66)	131 (90.34)	0.30	
	Very Low	6 (2.87)	203 (97.13)	0.08	

B: Forced Adjudication		Clinically Adjudicated Viral Infection			
Population	TriVerity Viral Band	Yes n (%)	No n (%)	Likelihood Ratio	AUROC
Immunosuppressed Cohort	Very High	21 (84.00)	4 (16.00)	20.5	0.81
	High	6 (27.27)	16 (72.73)	1.5	
	Moderate	4 (12.90)	27 (87.10)	0.58	
	Low	5 (9.80)	46 (90.20)	0.42	
	Very Low	7 (8.64)	74 (91.36)	0.37	
Immunocompetent Cohort	Very High	107 (85.60)	18 (14.40)	19.2	0.83
	High	28 (40.58)	41 (59.42)	2.2	
	Moderate	34 (23.12)	113 (76.88)	0.97	
	Low	35 (12.96)	235 (87.04)	0.48	
	Very Low	24 (6.78)	330 (93.22)	0.24	

Table 24: Likelihood Ratios for the Severity Interpretation bands in the TriVerity Test for the Prediction of Need for Mechanical Ventilation, Vasopressors, and/or Renal Replacement Therapy within 7 Days Stratified by Immunosuppression

		Need for Mechanical Ventilation, Vasopressors, and/or RRT Within 7 Days			
Population	TriVerity Severity Band	Yes n (%)	No n (%)	Likelihood Ratio (80% CI)	AUROC
Immunosuppressed Cohort	Very High	5 (50.00%)	5 (50.00%)	6.63 (2.71-15.89)	0.75
	High	10 (22.73%)	34 (77.27%)	1.95 (1.28-2.8)	
	Moderate	7 (15.91%)	37 (84.09%)	1.25 (0.74-1.89)	
	Low	4 (7.02%)	53 (92.98%)	0.5 (0.19-0.82)	
	Very Low	1 (1.96%)	50 (98.04%)	0.13 (0.0-0.34)	
Immunocompetent Cohort	Very High	13 (61.90%)	8 (38.10%)	14.01 (7.87-26.5)	0.79
	High	31 (22.79%)	105 (77.21%)	2.55 (2.01-3.22)	
	Moderate	31 (16.76%)	154 (83.24%)	1.74 (1.38-2.13)	
	Low	11 (4.47%)	235 (95.53%)	0.4 (0.26-0.56)	
	Very Low	9 (2.76%)	317 (97.24%)	0.24 (0.14-0.35)	

Table 25 shows pre- and post-test probabilities for the need for mechanical ventilation, vasopressor use and/or RRT within 7 days (primary endpoint) overall and stratified by qSOFA scores of 0-1 (indicating low risk) vs. 2-3 (indicating high risk). The sequential use of the clinical score qSOFA and TriVerity markedly increases the risk stratification for the need of mechanical ventilation, vasopressor use and/or RRT within 7 days compared to qSOFA alone. For both the qSOFA low risk 0-1 score and the qSOFA high risk 2-3 score participants could be further stratified into risk categories.

Table 25: Pre- and Post-Test Probabilities for the Need for Mechanical Ventilation, Vasopressor Use and/or Renal Replacement Therapy within 7 Days Overall and Stratified by qSOFA Scores of 0-1 (Low Risk) or 2-3 (High Risk)

	Illness Severity Score	Need for Mechanical Ventilation, Vasopressors, and/or RRT Within 7 Days		
qSOFA Day 0		NO	YES	% Positive
Low (0-1) N = 960 Positivity: 74/960 (7.71%)	Very high	11	12	52.17%
	High	127	21	14.19%
	Moderate	159	24	13.11%
	Low	249	10	3.86%
	Very low	340	7	2.02%
High (2-3) N = 82 Positivity: 38/82 (46.34%)	Very high	2	5	71.43%
	High	6	16	72.73%
	Moderate	16	12	42.86%
	Low	14	3	17.65%
	Very low	6	2	25.00%

d. Expected Values/Reference Range:

Blood samples from 120 self-reported healthy volunteers across various ethnicities and races were tested on the TriVerity test to characterize its performance in samples from healthy subjects. A large portion of bacterial (90.8%), viral (64.1%) and severity (99.2%) scores fell into the "Low" or "Very Low" interpretation bands. We did not observe marked differences in the bacterial, viral, or severity scores between different races or ethnicities.

Table 26: Bacterial Interpretation Band Range by Race and Ethnicity

Race/ Ethnicity		TriVerity Bacterial Band				
		Very Low (0-10)	Low (11-20)	Moderate (21-30)	High (31-40)	Very High (41-50)
Asian	N	3	20	4	0	0
	%	11.1%	74.1%	14.8%	0.0%	0.0%
Black	N	14	12	1	0	0
	%	51.9%	44.4%	3.7%	0.0%	0.0%
Hispanic	N	4	6	1	1	0
	%	33.3%	50.0%	8.3%	8.3%	0.0%
White	N	6	44	3	1	0
	%	11.1%	81.5%	5.6%	1.9%	0.0%
Total	N	27	82	9	2	0
	%	22.5%	68.3%	7.5%	1.7%	0.0%

Table 27: TriVerity Reference Viral Interpretation Band Range by Race and Ethnicity

Race/ Ethnicity		TriVerity Viral Band				
		Very Low (0-10)	Low (11-20)	Moderate (21-30)	High (31-40)	Very High (41-50)
Asian	N	6	11	8	2	0
	%	22.2%	40.7%	29.6%	7.4%	0.0%
Black	N	3	11	6	3	4
	%	11.1%	40.7%	22.2%	11.1%	14.8%
Hispanic	N	2	5	4	1	0
	%	16.7%	41.7%	33.3%	8.3%	0.0%
White	N	17	22	11	3	1
	%	31.5%	40.7%	20.4%	5.6%	1.9%
Total	N	28	49	29	9	5
	%	23.3%	40.8%	24.2%	7.5%	4.2%

Table 28: TriVerity Reference Severity Interpretation Band Range by Race and Ethnicity

Race/ Ethnicity		TriVerity Severity Band				
		Very Low (0-10)	Low (11-20)	Moderate (21-30)	High (31-40)	Very High (41-50)
Asian	N	22	4	0	1	0
	%	81.5%	14.8%	0.0%	3.7%	0.0%
Black	N	25	2	0	0	0
	%	92.6%	7.4%	0.0%	0.0%	0.0%
Hispanic	N	12	0	0	0	0
	%	100%	0.0%	0.0%	0.0%	0.0%
White	N	45	9	0	0	0
	%	83.3%	16.7%	0.0%	0.0%	0.0%
Total	N	104	15	0	1	0
	%	86.7%	12.5%	0.0%	0.8%	0.0%

13.0 INSTRUMENT NAME

Myrna™

14.0 SYSTEM DESCRIPTION

14.1 Modes of Operation:

Quantitative Reverse Transcription Loop-Mediated isothermal Amplification (qRT-LAMP) of mRNA

14.2 Software:

FDA has reviewed applicant's Hazard Analysis and software development processes for this line of product types:

Yes ___X____ or No _____

14.3 Specimen Identification:

This can be completed by the barcode reader or manually.

14.4 Specimen Sampling and Handling:

The Myrna instrument fully automates and integrates RNA isolation, amplification and result output for each specimen used for the TriVerity test. User intervention is required for collecting the whole blood sample by venipuncture using the PAXgene blood collection tubes within the PAXgene Blood RNA System (K042613). The user then mixes the sample by inversion followed by loading the tube into the cartridge and then inserting the cartridge into the Myrna instrument. For sample stability see (12.1.b) above.

14.5 Quality Control:

Each cartridge contains two internal process controls for amplification inhibition, assay reagents, and sample processing effectiveness.

15.0 PROPOSED LABELING

The labeling is sufficient, and it satisfies the requirements of 21 CFR Part 809.10.

16.0 CONCLUSION

The results of these analytical (non-clinical) and clinical studies demonstrate that TriVerity is substantially equivalent to SeptiCyte RAPID (K203748).