**510(k) SUBSTANTIAL EQUIVALENCE DETERMINATION**
**DECISION SUMMARY**

**A. 510(k) Number:**

K152635

**B. Purpose for Submission:**

New device

**C. Measurand:**

Anti-Scl-70 (topoisomerase 1) IgG antibodies

**D. Type of Test:**

Semi-quantitative chemiluminescent immunoassay (CIA)

**E. Applicant:**

INOVA Diagnostics, Inc.

**F. Proprietary and Established Names:**

QUANTA Flash® Scl-70
QUANTA Flash® Scl-70 Calibrators
QUANTA Flash® Scl-70 Controls

**G. Regulatory Information:**

1. Regulation section:

   21 CFR §866.5100 – Antinuclear Antibodies Immunological Test System
   21 CFR §862.1150 – Calibrator
   21 CFR §862.1660 – Quality Control Material (Assayed and Unassayed)

2. Classification:

   Class II (Test system and calibrator)

   Class I (Controls)

3. Product codes:

   LLL – Extractable antinuclear antibody, antigen and control

JIT Calibrator, Secondary
JJX Single (Specified) Analyte Controls (Assayed and Unassayed)

4. Panel:

Immunology (82) (Assay)
Clinical Chemistry (75) (Calibrators and Controls)

## H. Intended Use:

1. Intended use(s):

The QUANTA Flash Scl-70 is a chemiluminescent immunoassay for the semi-quantitative determination of IgG anti-Scl-70 autoantibodies in human serum. The presence of anti-Scl-70 autoantibodies, in conjunction with clinical findings and other laboratory tests, aids in the diagnosis of systemic sclerosis.

QUANTA Flash Scl-70 Calibrators are intended for use with the QUANTA Flash Scl-70 chemiluminescent immunoassay for the determination of IgG anti-Scl-70 autoantibodies in human serum. Each calibrator establishes a point of reference for the working curve that is used to calculate unit values.

QUANTA Flash Scl-70 Controls are intended for use with the QUANTA Flash Scl-70 chemiluminescent immunoassay for quality control in the determination of IgG anti-Scl-70 autoantibodies in human serum.

2. Indication(s) for use:

Same as Intended Use

3. Special conditions for use statement(s):

For Prescription Use only

4. Special instrument requirements:

BIO-FLASH® chemiluminescent analyzer (K083518)

## I. Device Description:

The QUANTA Flash Scl-70 kit includes one QUANTA Flash Scl-70 Reagent Cartridge with the following reagents for 50 determinations, one vial of Resuspension buffer, and one transfer pipette:

a. Scl-70 antigen coated paramagnetic beads, lyophilized
b. Assay Buffer
c. Tracer IgG Isoluminol labeled anti-human IgG antibodies in buffer

The QUANTA Flash Scl-70 Calibrators kit is sold separately and contains:

a. Calibrator 1: Two barcode labeled tubes containing pre-diluted, ready to use reagent.
b. Calibrator 2: Two barcode labeled tubes containing pre-diluted, ready to use reagent.

The QUANTA Flash Scl-70 Controls kit is sold separately and contains:

a. Negative Control: Two barcode labeled tubes containing ready to use reagent. Negative control contains human antibodies to Scl-70 in buffer.
b. Positive Control: Two barcode labeled tubes containing ready to use reagent. Positive control contains human antibodies to Scl-70 in buffer.

## J. Substantial Equivalence Information:

1. Predicate device name(s):
   QUANTA Lite Scl-70

2. Predicate 510(k) number(s):
   K924898

3. Comparison with predicate:
   **QUANTA Flash Scl-70 Reagents**

| **Similarities** | | |
|---|---|---|
| Item | Device<br>QUANTA Flash Scl-70 | Predicate<br>QUANTA Lite Scl-70 |
| Intended Use | The QUANTA Flash Scl-70 is a chemiluminescent immunoassay for the semi-quantitative determination of IgG anti-Scl-70 autoantibodies in human serum. The presence of anti-Scl-70 autoantibodies, in conjunction with clinical findings and other laboratory tests, aids in the diagnosis of systemic sclerosis. | QUANTA Lite Scl-70 is an enzyme-linked immunosorbent assay (ELISA) for the semi-quantitative detection of Scl-70 antibodies in human serum. The presence of Scl-70 antibodies can be used in conjunction with clinical findings and other laboratory tests to aid in the diagnosis of scleroderma. |
| Sample Type | Serum | Same |
| Traceability | Internal master calibrators | Same |
| Shelf Life | One year | Same |

| Differences | | |
|---|---|---|
| Item | Device<br>QUANTA Flash Scl-70 | Predicate<br>QUANTA Lite Scl-70 |
| Detection | Chemiluminescent immunoassay | Enzyme-linked immunosorbent assay |
| Solid Phase | Paramagnetic microparticles (beads), lyophilized | 96-well plate |
| Antigen | Recombinant Scl-70 | Native Scl-70 |
| Conjugate | Isoluminol conjugated anti-human IgG | Horseradish peroxidase conjugated anti-human IgG |
| Calibration | Lot specific Master Curve and two Calibrators (Sold separately) | Single standard included in the kit |
| Cut-off and measuring units | ≥20 CU (chemiluminescent units) | ≥20 U (arbitrary units) |
| Assay Measuring Range (AMR) | 1.2–739.6 CU | Not specified |

**QUANTA Flash Scl-70 Calibrators:**

| Similarities | | |
|---|---|---|
| Item | Device<br>QUANTA Flash Scl-70 Calibrators | Predicate |
| Analyte | Anti-Scl-70 antibodies | Same |
| Matrix | Human serum, buffers, stabilizers and preservative | Same |
| Physico-chemical characteristics | Liquid, pre-diluted, ready to use | Same |
| Shelf Life/Storage | One year at 2–8°C | Same |

| Differences | | |
|---|---|---|
| Item | Device<br>QUANTA Flash Scl-70 Calibrators | Predicate |
| Intended Use | For use with QUANTA Flash Scl-70 chemiluminescent immunoassay for the determination of IgG anti-Scl-70 antibodies in human serum. Each calibrator establishes a point of reference for the working curve that is used to calculate unit values. | No separate intended use; calibrator is part of the kit. |

**QUANTA Flash Scl-70 Controls:**

| Similarities | | |
|---|---|---|
| Item | Device<br>QUANTA Flash Scl-70 Controls | Predicate |
| Analyte | Anti-Scl-70 antibodies | Same |
| Matrix | Human serum, buffer, stabilizer, and preservative | Same |
| Physico-chemical characteristics | Liquid, ready to use | Same |
| Shelf Life/Storage | One year at 2–8°C | Same |

| Differences | | |
|---|---|---|
| Item | Device<br>QUANTA Flash Scl-70 Controls | Predicate |
| Intended Use | QUANTA Flash Scl-70 Controls are intended for use with the QUANTA Flash Scl-70 reagents for quality control in the determination of IgG anti-Scl-70 antibodies in human serum. | No separate intended use; controls are part of the kit. |
| Levels | 2 (low and high) | 2 (negative and positive) |

**K. Standard/Guidance Document Referenced (if applicable):**

- EP05-A2, Evaluation of Precision Performance of Quantitative Measurement Methods; Approved Guideline, Second Edition.
- EP6-A, Evaluation of Linearity of Quantitative Measurement, Approved Guideline.
- EP07-A2, Interference Testing in Clinical Chemistry, Approved Guideline, Second Edition
- EP09-A3, Measurement Procedure Comparison and Bias Estimation Using Patient Samples; Approved Guideline, Third Edition.
- EP17-A2, Evaluation of Detection Capability for Clinical Laboratory Measurement Procedures; Approved Guideline, Second Edition
- C28-A3, Defining, Establishing, and Verifying Reference Intervals in the Clinical Laboratory; Approved Guideline, Third Addition

**L. Test Principle:**

The QUANTA Flash Scl-70 assay is a microparticle chemiluminescent immunoassay designed for use on the BIO-FLASH instrument. The instrument platform is a fully automated closed system with continuous load and random access capabilities that automatically processes the samples, runs the assay and reports the results. It includes liquid handling hardware, luminometer and computer with software-user interface. The QUANTA Flash Scl-70 assay utilizes a reagent cartridge format, which is compatible with the BIO-FLASH instrument.

Purified recombinant Scl-70 antigen is coated onto paramagnetic beads. The bead suspension is lyophilized and stored in the bead tube. Prior to use in the BIO-FLASH system, the sealed reagent tubes are pierced with the reagent cartridge lid and the beads are reconstituted using resuspension buffer by pipetting up and down with a transfer pipette. The reagent cartridge is then loaded onto the BIO-FLASH instrument. Samples are also loaded onto the instrument in sample racks. A patient serum sample is prediluted by the BIO-FLASH with system rinse in a small disposable plastic cuvette. Small amounts of the diluted patient serum, the beads, and assay buffer are all combined into a second cuvette, and mixed. This cuvette is then incubated at 37°C. The beads are magnetized and washed several times. Isoluminol conjugated anti-human IgG antibodies are then added to the cuvette, and again incubated at 37°C. The beads are magnetized and washed repeatedly. The isoluminol conjugate is oxidized when Trigger 1 and Trigger 2 are added to the cuvette, and the flash of light produced from this reaction is measured as Relative Light Units (RLU) by the BIO-FLASH optical system. The RLU are proportional to the amount of isoluminol conjugate that is bound to the human IgG, which is in turn proportional to the amount of anti-Scl-70 antibodies bound to the corresponding Scl-70 on the beads.

The QUANTA Flash Scl-70 assay utilizes a predefined lot specific Master Curve that is uploaded into the instrument through the reagent cartridge barcode. Based on the results obtained by running two calibrators, an instrument specific Working Curve is created, which is used by the software to calculate chemiluminescent units (CU) from the RLU value obtained for each sample.

**M. Performance Characteristics (if/when applicable):**

1. Analytical performance: All results presented below were within the sponsor's pre-determined acceptance criteria for each study.

   *a. Precision/Reproducibility:*

   The precision of the QUANTA Flash Scl-70 assay was evaluated by running 13 patient samples across the assay range. Samples were run in duplicates, twice a day, for 20 days using one reagent lot (total of 80 replicates per sample). Controls were run as quality controls during each run. The study results are summarized in the table below.

| | | Within-Run | | Between-Day | | Between-Run | | Total | |
|---|---|---|---|---|---|---|---|---|---|
| Sample | Mean (CU) | SD | %CV | SD | %CV | SD | %CV | SD | %CV |
| 1 | 22.9 | 0.5 | 2.1 | 0.5 | 2.0 | 0.5 | 2.3 | 0.9 | 3.7 |
| 2 | 89.4 | 1.4 | 1.6 | 1.9 | 2.2 | 3.3 | 3.7 | 4.1 | 4.6 |
| 3 | 22.7 | 0.5 | 2.3 | 0.5 | 2.1 | 0.6 | 2.5 | 0.9 | 3.9 |
| 4 | 28.3 | 0.6 | 2.0 | 0.7 | 2.5 | 0.3 | 1.1 | 1.0 | 3.4 |
| 5 | 700.3 | 13.9 | 2.0 | 11.9 | 1.7 | 30.4 | 4.3 | 35.5 | 5.1 |
| 6 | 10.7 | 0.3 | 2.7 | 0.4 | 4.1 | 0.0 | 0.0 | 0.5 | 4.9 |
| 7 | 10.8 | 0.6 | 5.3 | 0.2 | 1.9 | 0.2 | 1.6 | 0.6 | 5.9 |
| 8 | 58.5 | 1.0 | 1.8 | 1.4 | 2.3 | 1.6 | 2.6 | 2.3 | 4.0 |
| 9 | 23.62 | 0.4 | 1.6 | 0.5 | 2.3 | 0.9 | 3.7 | 1.1 | 4.6 |
| 10 | 21.17 | 0.5 | 2.1 | 0.6 | 2.6 | 0.7 | 3.1 | 1.0 | 4.6 |
| 11 | 23.91 | 0.4 | 1.8 | 0.5 | 2.1 | 1.0 | 4.1 | 1.2 | 5.0 |
| 12 | 368.54 | 8.0 | 2.2 | 5.2 | 1.4 | 13.2 | 3.6 | 16.3 | 4.4 |
| 13 | 534.33 | 10.2 | 1.9 | 12.0 | 2.2 | 19.1 | 3.6 | 27.7 | 4.6 |

Site-to-site reproducibility:

Eight samples were tested on three different instruments at three different sites. Samples were run in replicates of five, once a day for five days, to generate 25 data points per sample, per site (total 75 replicates).

| | | Between-Site | |
|---|---|---|---|
| Sample ID | Mean (CU) | SD (CU) | %CV |
| 1 | 682.4 | 11.70 | 1.7 |
| 2 | 404.9 | 15.6 | 3.9 |
| 3 | 109.6 | 5.0 | 4.5 |
| 4 | 35.8 | 0.5 | 1.3 |
| 5 | 10.1 | 0.5 | 4.5 |
| 6 | 20.0 | 1.7 | 8.3 |
| 7 | 18.5 | 0.9 | 5.0 |
| 8 | 20.0 | 1.2 | 6.1 |

Lot-to-lot Reproducibility:

A lot-to-lot reproducibility study was performed by testing eight samples with three different lots of reagents in five replicates for five days, to generate 25 data points per lot (total 75 replicates).

| | | Between-Lot | |
|---|---|---|---|
| Sample ID | Mean (CU) | SD (CU) | %CV |
| 1 | 14.1 | 1.0 | 6.8 |
| 2 | 61.1 | 0.9 | 1.5 |
| 3 | 202.4 | 12.9 | 6.4 |
| 4 | 513.9 | 39.4 | 7.7 |
| 5 | 564.2 | 36.2 | 6.4 |
| 6 | 20.7 | 1.4 | 6.8 |
| 7 | 19.8 | 0.8 | 4.2 |
| 8 | 19.6 | 1.9 | 9.6 |

*b. Linearity/assay reportable range:*

The analytical measuring range (AMR) of the assay is defined by the LoQ and highest points on the master curve (1.2–786.3 CU). The linearity across this range was evaluated by a study designed according to CLSI EP6-A. Five high concentration serum samples were serially diluted in analyte free serum. Each dilution was tested in duplicate. The linear regression analysis with only samples within AMR resulted in the following equation:

| **Sample** | **Test Range (CU)** | **Slope (95% CI)** | **Y-intercept (95% CI)** | **$R^2$** | **Recovery Range (%)** |
|---|---|---|---|---|---|
| 1 | 81.2–739.6 | 0.96 (0.92–1.00) | 1.52 (-15.67–18.71) | 1.00 | 92.1–100.2 |
| 2 | 72.0–727.5 | 1.00 (0.96–1.04) | 29.57 (10.44–48.70) | 0.99 | 99.8–118.4 |
| 3 | 7.9–101.3 | 1.03 (1.00–1.05) | -2.57 (-4.09– -1.05) | 1.00 | 80.2–101.0 |
| 4 | 1.8–20.2 | 1.01 (0.98–1.04) | -0.47 (-0.84– -0.11) | 1.00 | 90.6–100.6 |
| 5 | 1.7–9.7 | 1.01 (0.98–1.04) | - 0.23 (-0.39– -0.05) | 0.99 | 87.6–100 |

Auto-rerun: The auto-rerun function was validated by testing three high positive samples (all with CU values > 786.3) with the auto-rerun feature enabled. The same three samples were also run after being manually diluted 20 fold. The results of the manually diluted samples were multiplied by 20, and compared with the results obtained by the instrument with the auto-rerun feature. Obtained results were divided by expected results (those obtained after manual dilution) to calculate percent recovery. Recovery values were 104%, 101% and 91%, with an average of 102% recovery.

*c. Traceability, Stability, Expected values (controls, calibrators, or methods):*

Traceability: There is no recognized standard or reference material for anti-Scl-70 autoantibodies. The calibrator and control values are directly traceable to in-house standards that are used to create the master curves for the QUANTA Flash Scl-70.

Value assignment: The QUANTA Flash Scl-70 Calibrators and Controls are manufactured by diluting human serum that contains a high titer of anti-Scl-70 antibodies. The target CU is achieved through trial dilutions on small scale. Once a dilution is selected, the Calibrators and Controls are bulked, tested, and adjusted. Upon completion of the manufacturing process, the Calibrators and Controls are tested on at least two instruments, on at least two lots of reagent cartridge, in replicates of 10 to determine final value assignment. The target values and ranges for the Calibrators and Controls are listed below:

| | **Target Value (CU)** | **Target Range (CU)** |
|---|---|---|
| *QUANTA Flash Scl-70 Calibrators* | | |
| Calibrator 1 | 13 | 11–15 |
| Calibrator 2 | 290 | 261–319 |
| *QUANTA Flash Scl-70 Controls* | | |
| Low control | 10 | 8–12 |
| High control | 50 | 40–60 |

Stability:

*Kit stability (unopened):* The accelerated stability study was performed using three lots of kits (with three different lots of Scl-70 coupled beads), calibrators, and controls. Accelerated stability testing supports a claim of one year at stability for unopened kits, calibrators and controls stored at 2–8°C. Real-time stability is on-going; the results to date support a claim of six months stability for unopened kits, calibrators and controls stored at 2–8°C.

*On-board (In-use) stability*: On-board stability study was performed for calibrators, controls, and reagent cartridge:

i. Calibrators: Calibrators were placed uncapped, onboard the instrument, and calibration was performed five times over 8.5 hours. Controls and a panel of characterized patient specimens were run on each calibration curve. Each calibrator is measured in triplicate during calibration. All calibrations were within the acceptance criteria.

ii. Controls: Two vials of each control were assayed twice a day for a total of 20 runs. The first run was used to establish baseline value, and then an additional 19 runs were performed. During runs, the Controls were left uncapped,

onboard the instrument for 15 minutes per run. When not in use, the controls were capped, and stored at 5ºC ± 3°C. Low and High Controls ran within their respective acceptable range for all runs.

iii. Reagent Cartridge: Two lots of cartridges were tested with four to six serum specimens (with different reactivity levels) along with the Negative and Positive Controls. The specimens were tested periodically until to 60 days. Percent recoveries were calculated compared to the day zero average values, and linear regression analysis was performed by plotting % recovery against the number of days.

All results met the manufacturer's acceptance criteria and support the following stability claim:

| | |
|---|---|
| **Calibrators** | 8 hours on-board; up to 4 calibrations |
| **Controls** | Up to 15 uses with 10 min on-board per use |
| **Reagent Cartridge** | 60 days on-board |

*Sample stability*: The study was performed with six samples, encompassing negative, equivocal, and low to high positive samples, tested at 2–8°C, and room temperature (RT). In addition, the samples were tested for the stability after repeated freeze/thaw cycles up to three cycles. The results support sample stability up to 48 hours of storage at RT, up to 21 days of storage at 2–8°C, and up to three freeze/thaw cycles when samples are stored at or below -20°C.

*d. Detection limit:*

Limit of Blank (LoB) was determined by assaying four blank samples in five replicates per sample over three days with two reagent lots. A total of 60 data points per lot were generated. LoB for each lot was calculated separately at the 95th percentile using the non-parametric method, as the dataset showed non-normal distribution. The LoB of both two lots was below the measuring range and was determined to be 0.02 CU and 0.05 CU. The claimed LoB value is 0.1 CU.

The Limit of Detection (LoD) was determined by assaying four low-level samples with anti-Scl-70 antibody concentration tested in five replicates over three days on two reagent lots (60 replicates per lot). LoD value was calculated as the LoB + 1.645 x SD of the replicates for the low level samples. The LoD of the QUANTA Flash Scl-70 assay for the two lots were below the measuring range. The claimed LoD is 614 RLU, equivalent to 0.2 CU.

The Limit of Quantitation (LoQ) was determined in a separate study using four low level samples run in replicates of five for three days on two reagent lots (120 data points total) was determined with a total error goal of 25%. The claimed LoQ is 1.2 CU.

*e. Analytical specificity:*

Endogenous Interferents:
The interference study was performed according to CLSI EP07-A2. Three specimens were tested (negative: 10.7 CU; low: 21.5 CU; positive: 49.4 CU). Interfering substances were spiked into every specimen at three different concentrations in 10% of total specimen volume, and the resulting samples were assessed in triplicate with the Scl-70 assay. Recovery of the unit values was calculated compared to control samples spiked with the same volume of diluent (10% of total). No interference was detected with bilirubin up to 10 mg/dL (recovery: 88% to 101%), hemoglobin up to 200 mg/dL (recovery: 93% to 105%), triglycerides up to 1000 mg/dL (recovery: 89% to 97%), cholesterol up to 224.3 mg/dL (recovery: 93% to 106%), human IgG up to 70 mg/mL (recovery 90% to109%mg/dL or < 4 CU), RF IgM up to 500 IU/mL (recovery: 97% to 111%), prednisone up to 0.3 mg/mL (recovery: 100.0% to 109.7%) and naproxen up to 25.6 mg/mL (recovery: 97.7% to 109.7%)

Analytical cross-reactivity:
Cross reactivity of the QUANTA Flash Scl-70 was investigated using 12 reference sera from the Center of Disease Control and Prevention (CDC) with one lot of QUANTA Flash Scl-70 reagents. The ANA human reference serum #9 (for human antibodies to Scl-70) tested positive (2323 CU). The other reference sera in the panel were below 6 CU.

*f. Assay cut-off:*

The cut-off was establish and verified using 254 samples from differentially diagnoses patients and healthy blood individuals in accordance to CLSI C28-A. The 99th percentile was taken into account for setting the cut-off. The value was set at 7,387 RLU which correspond to 20 CU. In addition, 19 systemic sclerosis samples that were positive on the predicate device were tested to aid in the determination of the cut-off. To ensure optimal differentiation between negatives and positives, the cut-off increased to 15,000 RLU and a 20 CU value was assigned to this RLU value**.**

2. Comparison studies:

*a. Method comparison with predicate device:*

Samples from the clinical validation studies (see below) were tested with QUANTA Flash Scl-70 and the predicate QUANTA Lite Scl-70. Samples within the assays' measuring ranges were included in the method comparison analysis (n = 152) along with 41 additional samples contrived by diluting Scl-70 positive samples with negative serum to cover the reportable range of assay.

| | | Quanta Lite Scl-70 | | |
|---|---|---|---|---|
| | | Negative | Positive | Total |
| Quanta Flash Scl-70 | Negative | 139 | 2 | 141 |
| | Positive | 10 | 42 | 52 |
| | Total | 149 | 44 | 193 |

Positive percent agreement: 95.5% (42/44) 95% CI: 84.9%¯98.7%
Negative percent agreement: 93.3% (139/149) 95% CI: 88.1%¯96.3%
Total percent agreement: 93.8% (181/193) 95% CI: 89.4%¯96.4%

*b. Matrix comparison:*

Not applicable.

3. Clinical studies:

*a. Clinical Sensitivity and Clinical Specificity:*

A total of 498 samples were included in the clinical evaluation for the QUANTA Flash Scl-70. This validation set of samples included 123 samples from SSc patients; samples from patients with other autoimmune diseases (e.g., systemic lupus erythematous (SLE), Sjögren's syndrome, mixed connective tissue disease (MCTD), idiopathic inflammatory myopathy, Crohn's disease, autoimmune thyroiditis, rheumatoid arthritis, vasculitis); samples from patients with infectious disease; and samples from patients with other diseases (e.g., osteoarthritis, chronic kidney disease, and asthma). Clinical sensitivity and specificity for SSc is summarized in the following table:

| | | Clinical Diagnosis of SSc | | |
|---|---|---|---|---|
| | | Positive | Negative | Total |
| QUANTA Flash Scl-70 | Positive | 52 | 5 | 57 |
| | Negative | 71 | 370 | 441 |
| | Total | 123 | 375 | 498 |

Sensitivity: 42.3% (95% CI: 33.9–51.1%)
Specificity: 98.7% (95% CI: 96.9–99.4%)

The distribution of the cohort and the anti-Scl-70 positivity rate for each clinical subgroup are summarized below:

| Diagnostic diagnosis | **N** | # Positive |
|---|---|---|
| Systemic Sclerosis | 123 | 52 (42.3%) |
| | | |
| *Other autoimmune diseases* | | |
| Systemic lupus erythematosus | 32 | 0 |
| Rheumatoid arthritis | 31 | 0 |
| Idiopathic Inflammatory Myopathy | 25 | 0 |
| Mixed Connective Tissue Disease | 25 | 0 |
| Celiac disease | 25 | 0 |
| Autoimmune thyroiditis | 25 | 0 |
| Sjögren's syndrome | 20 | 0 |
| Crohn's disease | 54 | 2 |
| Vasculitis | 15 | 0 |
| *Other diseases* | | |
| Osteoarthritis | 28 | 1 |
| COPD | 15 | 0 |
| Chronic Kidney Disease | 10 | 0 |
| Raynaud's disease | 10 | 0 |
| Diabetes | 5 | 0 |
| Asthma | 15 | 0 |
| Skin Disease | 10 | 1 |
| *Infectious diseases* | | |
| Hepatitis C virus infection | 10 | 1 |
| Epstein-Barr virus | 10 | 0 |
| Toxoplasmosis | 4 | 0 |
| Cytomegalovirus | 4 | 0 |
| Mycoplasma | 1 | 0 |
| Borrelia | 1 | 0 |

*b. Other clinical supportive data (when a. is not applicable):*

Not applicable

4. Clinical cut-off**:**

Not applicable

5. Expected values/Reference range:
The expected value in the normal population is negative. Anti-Scl-70 antibody levels were analyzed in a cohort of 100 apparently healthy blood donors (42 females and 58 males, ages 21 to 67 years, with an average and median age of about 46 years) using the QUANTA Flash Scl-70. The results are summarized below. This patient population was different from the one that was used to establish the cut-off.

| | Scl-70 (CU) |
|---|---|
| Mean | 0.5 |
| Median | 0.3 |
| Range | 0.0–2.2 |
| 90th percentile | 0.9 |
| 95th percentile | 1.4 |

**N. Proposed Labeling:**

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

**O. Conclusion:**

1. The submitted information in this premarket notification is complete and supports a substantial equivalence decision.