

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

A. 510(k) Number:

k123593

B. Purpose for Submission:

New Device

C. Measurand:

Anti-Sm antibodies (IgG)
Anti-ribonucleoprotein (RNP) antibodies (IgG)

D. Type of Test:

Semi-quantitative, Chemiluminescent Immunoassay (CIA)

E. Applicant:

INOVA Diagnostics, Inc.

F. Proprietary and Established Names:

QUANTA Flash® Sm
QUANTA Flash® Sm Calibrators
QUANTA Flash® Sm Controls

QUANTA Flash® RNP
QUANTA Flash® RNP Calibrators
QUANTA Flash® RNP Controls

G. Regulatory Information:

1. Regulation section:

21 CFR § 866.5100 Antinuclear Antibody Immunological Test System
21 CFR § 862.1150 Calibrator
21 CFR § 862.1660 Quality Control Material (assayed and unassayed)

2. Classification:

Class II – Assay and Calibrator
Class I – Quality Control Material

3. Product code:

LKP - Anti-Sm Antibody, Antigen and Control
LKO - Anti-RNP Antibody, Antigen and Control
JIT - Calibrator, Secondary
JJX - Single (Specified) Analyte Controls (Assayed and Unassayed)

4. Panel:

Immunology (82)
Clinical Chemistry (75)

H. Intended Use:

1. Intended use(s):

QUANTA Flash Sm

The QUANTA Flash Sm is a chemiluminescent immunoassay for the semi-quantitative determination of IgG anti-Sm antibodies in human serum. The presence of anti-Sm antibodies, in conjunction with clinical findings and other laboratory tests, can aid in the diagnosis of Systemic Lupus Erythematosus (SLE).

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

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

QUANTA Flash RNP

The QUANTA Flash RNP is a chemiluminescent immunoassay for the semi-quantitative determination of IgG anti-ribonucleoprotein (RNP) antibodies in human serum. The presence of anti-RNP antibodies, in conjunction with clinical findings and other laboratory tests, can aid in the diagnosis of Systemic Lupus Erythematosus (SLE) and Mixed Connective Tissue Disease (MCTD).

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

QUANTA Flash RNP Controls are intended for use with the QUANTA Flash RNP chemiluminescent immunoassay for quality control in the determination of IgG anti-RNP antibodies 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:

Materials provided:

1. QUANTA Flash® Sm/RNP Reagent Cartridge contains reagents for 50 determinations. Each cartridge has a barcode that contains the assay name, the assay ID number, the lot number and expiration date, the four parameters of the lot specific master curve, and the reagent cartridge specific serial number. The BIO-FLASH software monitors the expiration dates of the onboard cartridges, as well as the reagent cartridge lots.
 - a. Sm/RNP coated paramagnetic beads, lyophilized.
 - b. Assay buffer –colored pink, containing Tris-buffered saline, Teen 20, protein stabilizers and preservatives.
 - c. Tracer IgG – Isoluminol labeled anti-human IgG antibody, containing buffer, protein stabilizers and preservatives.
2. Resuspension buffer, 1 vial, one time use - colored pink, containing buffer, protein stabilizers and preservatives.

Materials required but not provided:

1. BIO-FLASH® instrument with operating computer
2. BIO- FLASH® System Rinse (part number: 3000-8205)
3. BIO-FLASH® Triggers (part number: 3000-8204)
4. BIO-FLASH® Cuvettes (part number: 3000-8206)
5. QUANTA-FLASH® Sm/RNP Calibrators (part number 701121 / 701116);
6. QUANTA-FLASH® Sm/RNP Controls (part number: 701122 / 701117)

J. Substantial Equivalence Information:

1. Predicate device name(s) and 510(k) number(s):

Predicate device	Predicate (510k) number(s)
QUANTA Lite™ Sm ELISA	k922831
QUANTA Lite™ RNP ELISA	k922833

2. Comparison with predicate:

Similarities		
Item	Device	Predicate
	QUANTA Flash Sm/RNP	QUANTA Lite Sm/RNP
Intended Use QUANTA Flash Sm	For the semi-quantitative determination of IgG anti-Sm antibodies in human serum. The presence of anti-Sm antibodies, in conjunction with clinical findings and other laboratory tests, can aid in the diagnosis of Systemic Lupus	For the semi-quantitative detection of Sm/RNP antibodies in human serum. The presence of Sm/RNP antibodies can be used in conjunction with clinical findings and other laboratory tests

Similarities		
Item	Device	Predicate
	QUANTA Flash Sm/RNP	QUANTA Lite Sm/RNP
QUANTA Flash RNP	Erythematosus (SLE). For the semi-quantitative determination of IgG anti-ribonucleoprotein (RNP) antibodies in human serum. The presence of anti-RNP antibodies, in conjunction with clinical findings and other laboratory tests, can aid in the diagnosis of Systemic Lupus Erythematosus (SLE) and Mixed Connective Tissue Disease (MCTD).	to aid in the diagnosis of System Lupus Erythematosus (SLE) and related connective tissue diseases.
Assay Type	Semi-quantitative	Same
Traceability	In-house standards	Same
Analyte detected	Human IgG, antibodies to Sm/RNP	Same
Antigen	Native Sm/RNP antigen, purified from calf thymus	Same
Sample matrix	Serum	Same
Shelf life (reagent kit, calibrators, controls)	One year at 2-8°C	Same
Controls	Negative and Positive	Same

Differences		
Item	Device	Predicate
	QUANTA Flash Sm/RNP	QUANTA Lite Sm/RNP
Assay methodology	Chemiluminescent immunoassay	Enzyme-linked immunosorbent assay (colorimetric)
Instrument platform	BIO-FLASH® chemiluminescent analyzer	Manual
Solid phase	Paramagnetic micro particles (beads)	96-well plate
Conjugate and detection antibody	Isoluminol conjugated anti-human IgG (monoclonal)	HRP conjugated anti-human IgG (polyclonal)
Calibration and	Lot specific Master Curve +	Sm/RNP single point

Differences		
Item	Device	Predicate
Calibrators	two Calibrators (Sold separately)	calibrator, low positive (Included in the kit)
Units	CU (chemiluminescent units), arbitrary	Units, arbitrary
Cutoff	20 CU	20 Units
Assay Range		
Sm	3.3 to 693.5 CU	N/A
RNP	3.5 to 643.8 CU	

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

CLSI EP7-02, Interference Testing in Clinical Chemistry; Approved Guideline
 CLSI EP6-A, Evaluation of the Linearity of Quantitative Measurement. Procedures: A Statistical Approach; Approved Guideline
 CLSI EO17-A, Protocols for Determination of Limits of Detection and Limits of Quantitation; Approved Guideline
 CLSI EP5-A2, Evaluation of Precision Performance of Quantitative Measurement Procedures - Approved Guideline
 CLSIEP09-A2-IR Method Comparison and Bias Estimation Using Patient Samples; Approved Guideline - Second Edition
 CLSI C28-A# Defining, Establishing, and Verifying Reference Intervals in the Clinical Laboratory; Approved Guideline

L. Test Principle:

The QUANTA Flash Sm and RNP assays are designed to run on the BIO-FLASH instrument. This 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 Sm and RNP assays utilize a reagent cartridge format, which is compatible with the BIO-FLASH instrument.

Native Sm or RNP antigen that is purified from calf thymus 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 rehydrated and resuspended 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 (Fe (III) coproporphyrin in sodium hydroxide solution) and Trigger 2

(urea-hydrogen peroxide in sodium chloride solution) 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-RNP antibodies bound to the Sm or RNP on the beads.

For quantitation, the QUANTA Flash Sm and RNP assays utilize a predefined lot specific Master Curve that is uploaded onto the instrument through the reagent cartridge barcode. Every new lot of reagent cartridge must be calibrated before first use with the QUANTA Flash Sm and RNP Calibrators. Based on the results obtained with the two Calibrators included in the Calibrator Set (sold separately), an instrument specific Working Curve is created, which is used to calculate chemiluminescent units (CU) from the instrument signal (RLU) obtained for each sample.

M. Performance Characteristics (if/when applicable):

1. Analytical performance:

a. *Precision/Reproducibility:*

The precision of the QUANTA Flash Sm/RNP assay was evaluated on samples containing various concentrations of Sm antibodies (5 serum samples) or RNP antibodies (7 serum samples). Samples were run in duplicates, twice a day, for at least 20 days. The %CV values were within the acceptance limit. The within run, between run, between day and total precisions are summarized in the table below:

QUANTA Flash Sm

N	Mean Value (CU)	Within Run %CV	Between Run %CV	Between Day %CV	Total Imprecision %CV
80	13.1	6.5	1.5	5.6	8.7
80	22.0	9.7	4.6	4.2	11.5
84	93.0	6.4	0.5	5.2	8.3
88	237.7	8.7	7.1	2.7	11.5
84	338.6	5.3	2.9	5.8	8.4

QUANTA Flash RNP

N	Mean Value %CV	Within Run %CV	Between Run %CV	Between Day %CV	Total Imprecision %CV
92	6.7	3.5	0.0	5.3	6.4
84	24.8	3.7	0.0	3.0	4.8
88	31.6	3.4	2.2	8.5	9.4
88	218.6	4.2	3.6	9.3	10.8
92	120.7	4.1	3.7	3.7	6.6
88	319.5	3.7	4.4	3.6	6.8
96	409.6	4.8	4.5	5.7	8.7

Reproducibility:

Three samples for Sm and RNP each were tested on two different reagent lots, using two different lots of calibrators, by two operators. Samples were run in quadruplicates, two times a day, for 10 days, to generate 80 data points. Data were analyzed and within run, between reagent lots, between calibrator lots, between operators and total precision were calculated and the results are summarized in the tables below. The %CV values ranged between 1.7 to 10.7%.

QUANTA Flash Sm:

N	Mean Value (CU)	Within Run %CV	Between reagent Lots %CV	Between Calibrator Lots %CV	Between operators %CV	Total %CV
80	15.2	2.8	9.4	6.9	6.9	7.0
80	23.3	2.4	10.7	7.6	7.3	7.7
80	157.3	3.5	10.1	9.6	8.4	8.3

QUANTA Flash RNP:

N	Mean Value (CU)	Within Run %CV	Between reagent Lots %CV	Between Calibrator Lots %CV	Between operators %CV	Total %CV
80	15.3	2.9	3.1	3.3	1.8	2.8
80	23.1	2.3	2.8	3.1	1.7	2.6
80	173.1	3.1	3.6	2.9	1.8	2.9

b. *Linearity/assay reportable range:*

Assay linear range:

Five serum samples with various anti-Sm or anti-RNP concentrations were diluted with a low negative serum sample to obtain values that cover the whole analytical measuring range. The percent recovery was more than 90%. The results are summarized for all samples:

QUANTA Flash Sm

Dilution range (CU)	Slope (95%CI)	Y-Intercept (95%CI)	R ²
3.3 – 8.2	1.07 (0.98 to 1.16)	-0.51 (-1.05 to 0.04)	0.98
4.3-42.7	1.03 (0.98-1.07)	-0.34 (-1.57 to 0.90)	0.99
6.1-61.2	1.02 (1.00 to 1.04)	-0.62 (-1.41 to 0.17)	1.00
43.5-435.4	0.98 0.94 to 1.03	-4.32 (-16.52 to 7.89)	0.99
123.8-866.4	0.93 (0.86-1.01)	38.2 (-3.8 to 80.3)	0.99

3.3-866.4 (combined)	0.99 (0.99 to 1.00)	0.81 (-3.2 to 4.8)	0.99
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The claimed linear range for Sm IgG is 3.3 to 693.5 CU

QUANTA Flash RNP

Dilution range (CU)	Slope (95% CI)	Y-Intercept (95% CI)	R ²
3.8 to 37.7	1.02 (0.97 to 1.08)	0.41 (-0.88 to 1.69)	0.99
13.1 to 130.5	1.02 (0.98 to 1.06)	-5.66 (-8.84 to -2.48)	0.99
12.9 to 128.6	1.02 (0.98 to 1.06)	-2.56 (-5.37 to 0.25)	1.00
63.2 to 631.8	1.01 (0.98 to 1.05)	-15.99 (-29.12 to -2.86)	1.00
81.1 to 730.2	1.07 (1.04 to 1.11)	-33.9 (-47.7 to -88.2)	0.99
3.8 to 730.2 Combined	1.01 (1.00 to 1.02)	-5.17 (-8.27 to -2.07)	1.00

The claimed linear range for RNP IgG is 3.5 to 643.8 CU

Over the range detection:

The BIO-FLASH software has an auto-rerun option available. If this option is selected, the instrument will automatically rerun any sample that has a result >693.5 CU for Sm and >643.8 CU for RNP by further diluting it by a factor of 10, and calculate the actual CU using this additional dilution factor. Samples as high as 6935 CU for Sm, and 6438 CU for RNP were tested.

High hook effect:

Five Sm and six RNP high positive samples were tested. The assay does not appear to demonstrate a hook effect at high concentration: up to 2429 CU in the Sm assay and up to 3140 CU in the RNP assay.

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

Traceability:

There are no recognized international standards for the measurement of anti-Sm and anti-RNP antibodies. Calibrators and controls are traceable to in-house standards that are used to create the master curve for the QUANTA Flash Sm and QUANTA Flash RNP assays.

Value assignment:

Calibrators and controls are manufactured by diluting human serum that contains high titer of anti-Sm or anti-RNP antibodies with a buffer stabilizers and preservative. The human serum is obtained from commercial sources and it is tested for markers of infectious substances. The target CU value is achieved through trial dilutions on a 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 QANTA Flash® Sm/RNP Calibrators are designed to adjust the predefined Master Curve into an instrument specific working curve.

Calibrators and controls are specified in the labeling but are not supplied with the assay. The target values and target ranges are the same for Sm and RNP. The table below summarizes the controls and calibrators target values and target ranges:

	Sm/RNP
Calibrators	
Calibrator 1	12.0 CU
Calibrator 2	300.0 CU
Controls	
Negative Control	10.0 CU
Positive Control	50.0 CU

Kit stability:

The claimed stability is based on accelerated studies and is summarized in the table below. Real time stability is ongoing. The BIO-FLASH software monitors the expiration dates of the onboard cartridges, as well as the reagent cartridge lots. Real time stability study is ongoing.

	Sm	RNP
Shelf Life		
Reagent Cartridge, Calibrators and Controls	1 year at 2-8C (until expiration date on label)	1 year at 2-8C (until expiration date on label)
After being opened		
Reagent Cartridge	33 days	28 days
Calibrators	8 hours (onboard only); up to 4 uses.	8 hours (onboard only); up to 4 uses.
Controls	10 min per use, up to 2.5 hours total onboard or up to 15 uses (whichever is fulfilled first)	10 min per use, up to 2.5 hours total onboard or up to 15 uses (whichever is fulfilled first)

e. *Detection limit:*

Limit of Blank (LoB):

LoB was determined with 60 measurements on two blank (immunoglobulin stripped) serum samples. The LoB RLU values are lower than the bottom

limit of the four parameter logistic curve that the instrument uses to calculate CU, and therefore cannot be converted into CU.

Limit of detection (LoD):

Five (5) serum samples were serially diluted until the RLU values no longer show a decreasing trend, to low-level samples that are in between the LoB to approximately 4 x LoB. The samples were run in replicates of 4 for 4 days to obtain 16 measurements per sample for a total of 80 measurements. The LoD of both assays is below lower limit of the reportable range which is 3.3 CU for Sm and 3.5 CU for RNP.

e. Analytical specificity:

Interfering substances:

Three samples for each analyte were tested: Sm -16.3 CU, 28.6 CU and 190.7 CU; RNP – 8.8 CU, 55.5 CU, and 280.3 CU. Interfering substances were spiked into the specimen in 10% of total specimen volume. The samples were tested in triplicates. Recovery of the unit values was calculated compared to control samples spiked with the same volume of diluent. No interference was observed up to the concentrations listed in the table below:

Potential Interfering Compound	Concentration
Bilirubin	10 mg/dL
Hemoglobin	200 mg/dL
Triglycerides	1000 mg/dL
Cholesterol	224.3 mg/dL
Rheumatoid factor (RF)	500 IU/mL

Cross reactivity:

To test potential cross-reactivity, patient samples with various antibodies to autoimmune or infectious disease markers were tested. The results are summarized in the tables below:

QUANTA Flash Sm

Patient group/Disease	N=	No (% Positive)
Autoimmune liver disease	2	0 (0.0%)
Viral hepatitis	19	0 (0.0%)
Scleroderma	74	3 (4.1%)
Sjögren’s Syndrome	5	0 (0.0 %)
Rheumatoid arthritis	70	0 (0.0%)
Systemic rheumatic disease, other	53	1 (1.9%)
Infectious disease (HIV + syphilis)	10	1 (10%)
Total	233	5 (2.1%)

Quanta Flash RNP

Patient group/Disease	N	No (% Positive)
Autoimmune liver disease	2	0 (0.0%)
Scleroderma	76	8 (10.5%)
Sjögren's Syndrome	6	0 (0.0%)
Rheumatoid arthritis	70	2 (2.9%)
Polymyositis/Dermatomyositis	14	1 (7.1%)
Other systemic rheumatic disease, other	48	0 (0.0%)
Viral hepatitis	20	0 (0.0%)
Infectious disease (HIV + syphilis)	10	1 (10%)
Total	246	12 (4.9%)

f. Assay cut-off:

The cutoff was determined by testing samples from reference subjects, 232 samples for Sm and 255 samples for RNP. The cutoff was established as >99th percentile of the results obtained on the reference subjects. The cutoff for both Sm and RNP assay was set at:

Negative <20 CU

Positive ≥20 CU

2. Comparison studies:

a. Method comparison with predicate device:

QUANTA Flash Sm

Samples for method comparison analysis include samples from the clinical validation studies (SLE patients, other disease controls). There were 9 discrepant results: 3 SLE, one HIV, one other autoimmune, 2 scleroderma, one ANA human reference sera, and one blood donor. Only samples within the assay measuring range were included. The results are summarized below:

QUANTA Flash Sm

		Sm ELISA		
		Positive	Negative	Total
QUANTA Flash Sm CIA	Positive	35	6	41
	Negative	3	75	78
	Total	38	81	119

Positive % agreement: 92.1% (35/38) (95% CI: 78.6 – 98.3%)

Negative % agreement 92.6% (35/38) (95% CI: 84.6 – 97.2%)

Total % agreement 92.4% [(75+35)/119] (95% CI: 86.1 – 96.5%)

QUANTA Flash RNP

Samples for method comparison analysis include samples from the clinical validation studies (SLE patients, other disease controls, and 5 blood donor samples). 14 samples were added to increase the number of samples around the cutoff, 13 of them were diluted to achieve the desired antibody level. There were 14 discrepant results: 9 SLE, one HIV and 3 diluted serum samples. Only samples within the assay measuring range were included. The results are summarized below:

		RNP ELISA		
		Positive	Negative	Total
QUANTA Flash RNP CIA	Positive	46	6	52
	Negative	11	104	115
	Total	57	110	167

Positive % agreement: 80.7% (46/57) (95% CI: 68.1 – 90.0%)

Negative % agreement 94.5% (104/110) (95% CI: 88.5 – 98.0%)

Total % agreement 89.8% [(46+104)/173] (95% CI: 84.2 – 94.0%)

b. *Matrix comparison:*

Not applicable; assay for human serum only

3. Clinical studies:

a. *Clinical Sensitivity and Specificity:*

A set of samples, none of which were used in establishing the reference range, was used to validate the clinical performance of the Sm and RNP CIA. None of the SLE samples are from drug-induced lupus patients.

QUANTA Flash Sm

A total of 379 samples were included in the Validation Set for the QUANTA Flash Sm. None of these samples were used in establishing the reference range. This validation set includes: 146 SLE patients, 202 samples from patients with other rheumatic diseases (including 74 with systemic sclerosis and 70 with RA), 2 samples from patients with autoimmune liver disease, 29 infectious disease serum samples (10 HBV, 9 HCV, 5 HIV, 5 syphilis). All samples were run on the QUANTA Flash Sm CIA. The results were analyzed to calculate sensitivity and specificity for SLE and are summarized below

QUANTA Flash Sm

	Diagnostic Group		
	+(SLE)	-(Not SLE)	Total
Positive test >20 CU	21	5	26
Negative test ≥20 CU	125	228	353
Total	146	233	379

Sensitivity (95% CI): 14.4% (9.1 – 21.1%)
 Specificity (95% CI); 97.9% (95.1- 99.3)

Quanta Flash RNP

A total of 424 samples were included in the Validation Set for the QUANTA Flash RNP. None of these samples were used in establishing the reference range. This validation set includes: 146 samples from SLE patients, 32 samples from MCTD patients, 48 samples from patients with other rheumatic diseases (not SLE and not MCTD), 2 patients with autoimmune liver disease, 6 patients with Sjögren’s syndrome, 76 samples from patients with systemic sclerosis, 70 samples from rheumatoid arthritis patients, 14 samples from patients with polymyositis/dermatomyositis, 30 infectious disease serum samples (10 HBV, 10 HCV, 5 HIV, 5 syphilis). All samples were run on the QUANTA Flash RNP CIA. The results were analyzed to calculate sensitivity and specificity for SLE and are summarized below:

QUANTA Flash RNP in SLE

	Diagnostic Group		
	+	-	Total
	(SLE)	(Not SLE)	
Positive test >20 CU	42	12	54
Negative test ≥20 CU	104	234	338
Total	146	246	392

Sensitivity (95% CI): 28.8% (21.6 – 36.8%)
 Specificity (95% CI); 95.1% (91.6-97.5%)

QUANTA Flash RNP in MCTD

	Diagnostic Group		
	+	-	Total
	(MCTD)	(Not SLE/MCTD)	
Positive test >20 CU	24	12	36
Negative test ≥20 CU	8	234	242
Total	32	246	278

Sensitivity (95% CI): 75.0% (56.6 – 88.5%)
 Specificity (95% CI); 95.1% (91.6 - 97.5%)

The tables below show the prevalence of antibodies for each clinical subgroup and each analyte, as determined by the QUANTA Flash tests:

Prevalence of Sm determined by QUANTA Flash Sm

Patient group/Disease	N=	No (% Positive)
SLE	146	21(14.4%)
Autoimmune liver disease	2	0 (0.0%)
Viral hepatitis	19	0 (0.0%)

Patient group/Disease	N=	No (% Positive)
Scleroderma	74	3 (4.1%)
Sjögren's Syndrome	5	0 (0.0 %)
Rheumatoid arthritis	70	0 (0.0%)
Systemic rheumatic disease, other	53	1 (1.9%)
Infectious disease (HIV + syphilis)	10	1 (10%)
Total		379

Prevalence of RNP determined by QUANTA Flash RNP

Patient group/Disease	N	No (% Positive)
SLE	146	42 (28.8%)
MCTD	32	24 (75.0%)
Autoimmune liver disease	2	0 (0.0%)
Scleroderma	76	8 (10.5%)
Sjögren's Syndrome	6	0 (0.0%)
Rheumatoid arthritis	70	2 (2.9%)
Polymyositis/Dermatomyositis	14	1 (7.1%)
Other systemic rheumatic disease, other	48	0 (0.0%)
Viral hepatitis	20	0 (0.0%)
Infectious disease (HIV + syphilis)	10	1 (10%)
Total		424

- b. Other clinical supportive data (when a. is not applicable):
Not applicable
4. Clinical cut-off:
Same as assay cutoff
5. Expected values/Reference range:

The anti-Sm and anti-RNP antibody levels were analyzed on a panel of 101 apparently healthy blood donors (71 female and 30 males, ages 18 to 55, with an average age and median age of 34 years). With the cutoff of 20 CU, 1% of the samples were positive. The mean concentration was:

QUANTA Flash Sm: 3.6 CU (ranging from <3.3 to 20.5 CU)

QUANTA Flash RNP: 5.7 CU (ranging from <3.5 to 196.8 CU) for

N. Proposed Labeling:

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

O. Conclusion:

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