October 17, 2025

Siemens Healthcare Diagnostics, Inc.
Mey Vasquez
Regulatory Affairs Professional
511 Benedict Avenue
Tarrytown, New York 10591

Re: K250250
Trade/Device Name: ADVIA Centaur Anti-Thyroid Peroxidase II (aTPOII)
Regulation Number: 21 CFR 866.5870
Regulation Name: Thyroid Autoantibody Immunological Test System
Regulatory Class: Class II
Product Code: JZO
Dated: September 15, 2025
Received: September 16, 2025

Dear Mey Vasquez:

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,

Ying Mao -S

Ying Mao, Ph.D.
Branch Chief
Division of Immunology and Hematology 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)*
K250250

Device Name
ADVIA Centaur Anti-Thyroid Peroxidase II (aTPOII)

Indications for Use *(Describe)*
The ADVIA Centaur Anti-Thyroid Peroxidase II (aTPOII) assay is for in vitro diagnostic use in the quantitative measurement of autoantibodies against thyroid peroxidase in human serum and plasma (EDTA and lithium heparin) using the ADVIA Centaur XP system.

Anti-thyroid peroxidase (aTPO) measurements are used, in conjunction with a clinical assessment, as an aid in the diagnosis of autoimmune thyroiditis and/or Graves' disease.

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.

510(k) Summary of Safety and Effectiveness

Introduction: According to the requirements of SMDA 1990 and 21 CFR 807.92, the following information provides sufficient details to understand the basis for determination of substantial equivalence.

The assigned 510(k) Number: _____K250250_____

1. Date Prepared

October 17, 2025

2. Applicant Information

Siemens Healthcare Diagnostics Inc.
511 Benedict Avenue,
Tarrytown, NY 10591 USA

Contact: Mey Vasquez
Regulatory Affairs Professional
E-mail : mey.vasquez@siemens-healthineers.com

3. Regulatory Information

Assay

Trade Name	ADVIA Centaur Anti-Thyroid Peroxidase II (aTPOII)
Device	Thyroid autoantibody immunological test system
Definition	A thyroid autoantibody immunological test system is a device that consists of the reagents used to measure by immunochemical techniques the thyroid autoantibodies (antibodies produced against the body's own tissues). Measurement of thyroid autoantibodies may aid in the diagnosis of certain autoimmune thyroid disorders.
FDA Classification	Class II
Review Panel	Immunology
Product Code	JZO

Regulation Number	21 CFR 866.5870

4. PREDICATE DEVICE

Name of Device: Architect Anti-TPO

510(k): K052407

5. DEVICE DESCRIPTION

The following devices are included in the ADVIA Centaur® Anti-Thyroid Peroxidase II (aTPOII):

Material Description
aTPOII ReadyPack® primary reagent pack **Lite Reagent** 10.0 mL/reagent pack Recombinant TPO (~90 ng/mL) complexed with mouse monoclonal anti-TPO antibody (~30 ng/mL) labeled with acridinium ester in phosphate buffer; blocker (bovine and mouse); surfactant; sodium azide (< 0.1%); preservatives **Solid Phase** 20.0 mL/reagent pack Streptavidin-coated paramagnetic microparticles (~0.3 mg/mL) with biotinylated mouse monoclonal anti-TPO antibody (~6 µg/mL) in phosphate buffer; blocker (bovine and mouse); surfactant; sodium azide (< 0.1%); preservatives Tg ReadyPack® primary reagent pack
aTPOII CAL 1.0 mL/vial After reconstitution, low and high levels of anti-TPO (human) in defibrinated human plasma; sodium azide (< 0.1%); preservatives

The following devices are sold separately:

Material Description
ADVIA Centaur aTPOII MCM:
MCM 1:
1.0 mL/vial After reconstitution, defibrinated human plasma; sodium azide (< 0.1%); preservatives
MCM 2–4:
1.0 mL/vial After reconstitution, various levels of anti-TPO (human) in defibrinated human plasma; sodium azide (< 0.1%); preservatives
ADVIA Centaur aTPOII QC
2.0 mL/vial After reconstitution, low and high levels of anti-TPO (human) in defibrinated human plasma; sodium azide (< 0.1%); preservatives
ADVIA Centaur aTPOII DIL ReadyPack ancillary reagent pack
2 x 5.0 mL/reagent pack Defibrinated human plasma negative for anti-TPO (human); sodium azide (< 0.1%); preservatives

6. INTENDED USE/ INDICATIONS FOR USE

The ADVIA Centaur® Anti-Thyroid Peroxidase II (aTPOII) assay is for in vitro diagnostic use in the quantitative measurement of autoantibodies against thyroid peroxidase in human serum and plasma (EDTA and lithium heparin) using the ADVIA Centaur® XP system.

Anti-thyroid peroxidase (aTPO) measurements are used, in conjunction with a clinical assessment, as an aid in the diagnosis of autoimmune thyroiditis and Graves' Disease.

7. Special Conditions for Use Statement

For Prescription Use

8. COMPARISION OF TECHNOLOGICAL CHARACTERISTICS WITH THE PREDICATE DEVICE

	Candidate Device	Predicate
Item	**ADVIA Centaur aTPOII**	**Architect Anti-TPO (K052407)**
Intended Use/ Indications for Use	The ADVIA Centaur® Anti-Thyroid Peroxidase II (aTPOII) assay is for in vitro diagnostic use in the quantitative measurement of autoantibodies against thyroid peroxidase in human serum and plasma (EDTA and lithium heparin) using the ADVIA Centaur® XP system. Anti-thyroid peroxidase (aTPO) measurements are used, in conjunction with a clinical assessment, as an aid in the diagnosis of autoimmune thyroiditis and Graves' Disease.	Architect® Anti-TPO is a chemiluminescent microparticle Immunoassay (CMIA) for the quantitative determination of the IgG class of thyroid peroxidase autoantibodies (anti-TPO) in human serum and plasma (EDTA and Heparin) on the Architect® *i* System. The Architect® Anti-TPO assay is intended for use as an aid in the diagnosis of autoimmune thyroid disease.
Instrument	ADVIA Centaur XP System	ARCHITECT® *i* System
Assay Range	4.6–400.0 IU/mL	0.5 to 1000.0 IU/mL
LoB	2.3 IU/mL	0.159 IU/mL
LoD	4.6 IU/mL	None
LoQ	4.6 IU/mL	None
Measurement	Quantitative	Same
Technology	Chemiluminescent	Chemiluminescent microparticle (CMIA)
Operating Principle	Fully automated 1-step competitive immunoassay	Chemiluminescent microparticle immunoassay (CMIA) referred as Chemiflex
Sample type	Serum, EDTA plasma, Lithium Heparin Plasma	Same

	Candidate Device	Predicate
Item	**ADVIA Centaur aTPOII**	**Architect Anti-TPO (K052407)**
Standardization	The assay standardization is traceable to the NIBSC (National Institute for Biological Standards and Control) 66/387 Research Standard, Human Anti-Thyroid Microsome Serum. Assigned values for calibrators and controls are traceable to this standardization.	The anti-TPO reference calibrator is traceable to the NIBSC 66/387 reference preparation.
Calibration	2 levels	6 levels
Clinical Cut-Off	10.4 IU/mL	5.6 IU/mL
Sample Volume	30 µL	The minimum sample volume is calculated by the system.

9. PERFORMANCE CHARACTERISTICS DATA

9.1. Detection Capability

The limit of blank (LoB), limit of detection (LoD), and the limit of quantitation (LoQ) were determined as described in CLSI protocol EP17-A2.

The ADVIA Centaur aTPOII assay has a LoB of 2.3 IU/mL, a LoD of 4.6 IU/mL, and a LoQ of 4.6 IU/mL.

9.2. Precision

Precision was determined using the ADVIA Centaur XP system in accordance with CLSI document EP05-A3. Samples were assayed in replicates with 2 runs per day using a 20-day protocol. The following results are representative of the performance of the assay:

			Repeatability		Within-Laboratory Precision	
Sample	**N[a]**	**Mean (IU/mL)**	**SD[b] (IU/mL)**	**CV[c] (%)**	**SD (IU/mL)**	**CV (%)**
Serum A	80	6.0	0.56	9.3	0.86	14.2

Sample	N[a]	Mean (IU/mL)	Repeatability		Within-Laboratory Precision	
			SD[b] (IU/mL)	CV[c] (%)	SD (IU/mL)	CV (%)
Serum B	80	12.8	1.17	9.1	1.18	9.2
Serum C	80	17.1	1.76	10.3	1.97	11.5
Serum D	80	26.2	1.67	6.4	1.84	7.0
Serum E	80	124.4	5.73	4.6	6.21	5.0
Serum F	80	170.0	8.99	5.3	9.74	5.7
Serum G	80	362.4	22.12	6.1	22.12	6.1
Control 1	80	25.3	1.35	5.3	1.75	6.9
Control 2	80	175.4	8.51	4.9	11.99	6.8

[a] Number of measurements.
[b] Standard deviation.
[c] Coefficient of variation.

9.3. Reproducibility

Reproducibility was determined using the ADVIA Centaur XP system in accordance with CLSI Document EP05-A3. Testing was performed using 3 instruments and 3 reagent lots. Samples were assayed in replicates of 5 with 1 run per day using a 5-day protocol. (Number of measurements per sample = 225.) The following results are representative of the performance of the assay:

Sample	Mean (IU/mL)	Repeatability		Between Day		Between Instrument		Between Lot		Reproducibility	
		SD[a] (IU/mL)	CV[b] (%)	SD (IU/mL)	CV (%)	SD (IU/mL)	CV (%)	SD (IU/mL)	CV (%)	SD (IU/mL)	CV (%)
Serum A	5.2	0.70	13.5	0.68	13.1	0.00	0.0	0.30	5.8	1.02	19.6
Serum B	10.2	0.79	7.8	0.68	6.7	0.89	8.8	0.22	2.2	1.39	13.7
Serum C	16.1	1.14	7.1	0.85	5.3	1.16	7.2	0.42	2.6	1.88	11.7
Serum D	23.4	1.56	6.7	0.95	4.1	0.51	2.2	0.41	1.8	1.94	8.3
Serum E	28.9	1.87	6.5	0.92	3.2	0.60	2.1	2.16	7.5	3.07	10.6
Serum F	131.9	6.20	4.7	3.16	2.4	2.33	1.8	11.23	8.5	13.41	10.2
Serum G	172.0	9.38	5.5	4.25	2.5	3.64	2.1	13.41	7.8	17.30	10.1
Serum H	358.6	17.96	5.0	15.56	4.3	9.98	2.8	27.58	7.7	37.75	10.5

Sample	Mean (IU/mL)	Repeatability SD[a] (IU/mL)	Repeatability CV[b] (%)	Between Day SD (IU/mL)	Between Day CV (%)	Between Instrument SD (IU/mL)	Between Instrument CV (%)	Between Lot SD (IU/mL)	Between Lot CV (%)	Reproducibility SD (IU/mL)	Reproducibility CV (%)
Control 1	28.7	1.76	6.1	1.18	4.1	0.77	2.7	0.41	1.4	2.29	8.0
Control 2	201.0	8.06	4.0	5.58	2.8	1.46	0.7	3.71	1.8	10.58	5.3

[a] Standard deviation.
[b] Coefficient of variation.

9.4. Linearity

Linearity testing was performed in accordance with CLSI Document EP06-ed2. The assay is linear for the measuring interval of 4.6–400.0 IU/mL.

9.5. Specimen Equivalence

Specimen equivalency was determined with the Passing-Bablok regression model using the ADVIA Centaur XP system in accordance with CLSI Document EP09c-Ed3. Agreement of the specimen types may vary depending on the study design and population tested.

Tube (y) vs. Serum (x)	Regression Equation	Sample Interval	N[a]	r[b]
Plasma, dipotassium EDTA	y = 0.99x - 0.87 IU/mL	6.40 – 380.9 IU/mL	56	0.975
Plasma, lithium heparin	y = 0.94x + 0.1 IU/mL	6.40 – 398.0 IU/mL	56	0.987

[a] Number of samples tested.
[b] Correlation coefficient.

9.6. Interferences

Hemolysis, Icterus, Lipemia (HIL)

Interference testing was performed using the ADVIA Centaur XP system in accordance with CLSI Document EP07-Ed3. The following substances do not interfere with the assay when present in serum at the concentrations indicated. Bias due to these substances does not exceed ± 4.0 IU/mL at anti-TPO concentrations of 10.4–40.0 IU/mL or ± 10.0% at anti-TPO concentrations of 130.0–270.0 IU/mL.

Substance	Substance Test Concentration
Hemoglobin	1000 mg/dL (10 g/L)
Bilirubin, conjugated	60 mg/dL (712 µmol/L)

Substance	Substance Test Concentration
Bilirubin, unconjugated	60 mg/dL (1026 µmol/L)
Lipemia (Intralipid)	3500 mg/dL (35 g/L)

Other Substances

Interference testing was performed using the ADVIA Centaur XP system in accordance with CLSI Document EP07‑Ed3. The following substances do not interfere with the assay when present in serum at the concentrations indicated. Bias due to these substances does not exceed ± 4.0 IU/mL at anti-TPO concentrations of 10.4‑40.0 IU/mL or ± 10.0% at anti-TPO concentrations of 130.0‑270.0 IU/mL.

Substance	Substance Test Concentration	Substance	Substance Test Concentration
Acetaminophen	20 mg/dL (1323 µmol/L)	Liothyronine	0.0075 mg/dL (0.115 µmol/L)
Acetylcysteine	15 mg/dL (919.1 µmol/L)	Losartan potassium	0.2 mg/dL (4.73 µmol/L)
Acetylsalicylic acid (aspirin)	65 mg/dL (3608 µmol/L)	Methimazole	8 mg/dL (700.7 µmol/L)
Ampicillin sodium	7.5 mg/dL (201.9 µmol/L)	Methyldopa	2.25 mg/dL (106.5 µmol/L)
Ascorbic acid	5.25 mg/dL (298.1 µmol/L)	Methylprednisolone	0.783 mg/dL (20.9 µmol/L)
Atorvastatin calcium	0.075 mg/dL (1.34 µmol/L)	Metoprolol tartrate	0.15 mg/dL (5.61 µmol/L)
Biotin	3500 ng/mL (14.3 µmol/L)	Metronidazole	12.3 mg/dL (702.9 µmol/L)
Carbimazole	3 mg/dL (161.1 µmol/L)	Octreotide	0.03 mg/dL (0.294 µmol/L)
Cefoxitin	660 mg/dL (15.44 mmol/L)	Omeprazole	0.84 mg/dL (24.32 µmol/L)
Cholesterol	400 mg/dL (10.4 mmol/L)	Phenylbutazone	32.1 mg/dL (1.04 mmol/L)
Cyclosporine	0.18 mg/dL (1.5 µmol/L)	Prednisone	9.9 µg/dL (0.276 µmol/L)
Dexamethasone	1.2 mg/dL (30.6 µmol/L)	Propranolol Hydrochloride	24 mg/dL (811.4 µmol/L)
Doxycycline	1.8 mg/dL (40.5 µmol/L)	Propylthiouracil	30 mg/dL (1.76 mmol/L)
EDTA, tripotassium	425 mg/dL (9.60 mmol/L)	Rheumatoid factor (RF)	750 IU/mL
Human anti-mouse antibody (HAMA)	67 ng/mL (67 µg/L)	Rifampicin	4.8 mg/dL (58.3 µmol/L)
Ibuprofen	50 mg/dL (2424 µmol/L)	Silwet L 720 (Octamethylcyclotetrasiloxane)	0.03 mg/mL (101 µmol/L)
Immunoglobulin G (IgG)	6 g/dL (60 g/L)	Theophylline	6 mg/dL (333.0 µmol/L)

Substance	Substance Test Concentration	Substance	Substance Test Concentration
Iodide	38 mg/dL (2.99 mmol/L)	Thyroxine	1000 µg/mL (1.29 mmol/L)
Levodopa	0.75 mg/dL (38.0 µmol/L)	Total Protein	12 g/dL (120 g/L)

9.7. Cross-Reactivity

Cross-reactivity was determined using the ADVIA Centaur XP system in accordance with CLSI Document EP07-Ed3. Cross-reactivity of samples spiked with various substances does not exceed ± 4.0 IU/mL at anti-TPO concentrations of 10.4–40.0 IU/mL or ± 5.0% at anti-TPO concentrations of 130.0–270.0 IU/mL.

Substance	Substance Test Concentration
Anti-thyroglobulin antibody (TgAb)	2000 IU/mL
Thyroglobulin (Tg)	700 ng/mL
Thyroid-stimulating immunoglobulin (TSI)	113 IU/L

9.8. Reagent Stability

The shelf-life stability of the ADVIA Centaur aTPOII reagents (ReadyPack and calibrator) and ADVIA Centaur aTPOII diluent was determined to be 24 months.

The on-board stability of the ADVIA Centaur aTPOII reagents (ReadyPack and calibrator) was determined to be 42 days on the ADVIA Centaur XP system with a calibration interval of 42 days.

The on-board stability of the ADVIA Centaur aTPOII calibrators on the ADVIA Centaur XP system was determined to be 8 hours.

The on-board stability of the ADVIA Centaur aTPOII diluent on the ADVIA Centaur XP system was determined to be 28 days.

The ADVIA Centaur aTPOII calibrators when reconstituted were determined to be stable at 2-8°C and room temperature for 28 days and 8 hours, respectively.

9.9. Sample Stability

- This specimen types recommended for this assay are serum and plasma. Sample stability studies were conducted using SST, K2 EDTA Plasma, and Lithium Heparin tube types.
- After centrifugation, specimens in the primary collection device are stable for up to 8 hours at room temperature. Samples in the primary collection device include plasma stored on packed red cells, and serum samples processed and stored in gel-barrier blood collection tubes.
- Separated samples are stable for up to 8 hours at room temperature, and for up to 7 days at 2–8°C.
- Separated samples are stable at ≤ -20°C for up to 6 months. Avoid more than 2 freeze- thaw cycles. Do not store in a frost-free freezer. Thoroughly mix thawed samples and centrifuge them before using.

9.10. Expected Values

A reference interval for apparently healthy adults was established non-parametrically using the ADVIA Centaur XP system in accordance with CLSI Document EP28-A3c. Samples were collected prospectively from euthyroid male and female adult subjects with normal TSH levels. The reference interval was determined by calculating the 95th percentile of the distribution of values. A small percentage of samples (3.8%) were above the clinical cut-off of 10.4 IU/mL. Some level of positivity may be expected in the normal population.

Group	N[a]	Median IU/mL	Reference Interval IU/mL
Adults (23 – 96 years)	261	< 4.6	< 10.4

[a] Number of samples tested.

As with all *in vitro* diagnostic assays, each laboratory should determine its own reference interval for the diagnostic evaluation of patient results. Consider these values as guidance only.

9.11. Clinical Performance

The performance of the ADVIA Centaur aTPOII assay was determined by testing a total of 666 samples using the ADVIA Centaur XP system in accordance with CLSI Document EP12-A2.

A prospective multi-center clinical study was conducted to evaluate the ADVIA Centaur aTPOII assay in the detection of autoimmune thyroiditis across 6 sites in the United States. A total of 364 samples were prospectively collected from patients presenting to endocrinologists with signs and symptoms of AITD. This population included patients with previously diagnosed Graves' disease and Autoimmune thyroiditis (formerly known as Hashimoto's thyroiditis) who

were treatment-naïve or had been on treatment ≤ 6 months, and female patients who were pregnant or postpartum. Definitive diagnosis of AITD or non-autoimmune thyroid disease (NAITD) was made by the endocrinologist according to American Thyroid Association criteria.

Clinical sensitivity and specificity estimates were determined for the 364 prospectively collected samples:

Table 1: Graves' sensitivity and specificity estimates

Parameter	N	Estimate	95% CI
Sensitivity	100	60.0% (60/100)	(50.2, 69.1%)
Specificity	157	89.2% (140/157)	(83.3, 93.1%)

Table 2: Autoimmune thyroiditis sensitivity and specificity estimates

Parameter	N	Estimate	95% CI
Sensitivity	107	82.2% (88/107)	(73.9, 88.3%)
Specificity	157	89.2% (140/157)	(83.3, 93.1%)

Table 3: Overall sensitivity and specificity estimates

Parameter	N	Estimate	95% CI
Sensitivity	207	71.5% (148/207)	(65.0, 77.2%)
Specificity	157	89.2% (140/157)	(83.3, 93.1%)

Additionally, 302 samples were retrospectively or prospectively collected from subjects with other thyroid conditions, disease states, or pregnancy, which may be expected to have elevated thyroid antibodies, to evaluate the specificity of the ADVIA Centaur aTPOII assay. The 302 samples were not evaluated for the presence or absence of autoimmune thyroid disease.

The sensitivity and specificity estimates were determined for the prospectively and retrospectively collected samples:

		Diagnosis			
		Autoimmune thyroiditis (Hashimoto's Disease)	**Graves' Disease**	**Controls[a]**	**Total**
ADVIA Centaur aTPOII	Positive	60	88	84	231
	Negative	40	19	375	435
	Total	100	107	459	666
Autoimmune thyroiditis (Hashimoto's Disease)	Sensitivity:	60.0% (60/100)	95 CI 50.2–69.1%		
	Specificity:	81.7% (375/459)	95 CI 77.9,85.0%		
Graves'	Sensitivity:	82.2% (88/107)	95 CI 73.9–88.3%		
	Specificity:	81.7% (375/459)	95 CI 77.9-85.0%		

[a] The controls cohort includes 302 samples from subjects with other thyroid conditions, disease states, or pregnancy and 157 samples from prospectively collected samples diagnostically confirmed negative for autoimmune thyroid disease; see the distribution of samples table below.

The overall sensitivity and specificity estimates were determined to be 71.5% for sensitivity and 81.7% for specificity.

Parameter	N	Estimate	95% CI
Sensitivity	207	71.5% (148/207)	(65.0, 77.2%)
Specificity	459	81.7% (375/459)	(77.9, 85.0%)

For each clinical subgroup, the percent positivity of the ADVIA Centaur aTPOII assay was calculated using an assay cut-off of 10.4 IU/mL.

The percent agreement between the ADVIA Centaur aTPOII assay and a commercially available anti-thyroid peroxidase (aTPO) assay was evaluated in accordance with CLSI EP12-A2 guidelines. The study included:

- 364 AITD and NAITD prospectively collected samples
- 570 NAITD retrospectively collected samples
- 24 apparently healthy individual samples

Samples outside the assay's measuring interval were excluded, resulting in a final analysis set of 280 samples. The percent agreement estimates are summarized in the accompanying table below.

		Comparative Assay		
		Positive	**Negative**	**Total**
ADVIA Centaur aTPOII Assay	≥ **10.4 IU/mL**	199	1	200
	< **10.4 IU/mL**	28	52	80
	Total	227	53	280
PPA: 87.7% (199/227)[95% Confidence Interval: (82.8,91.3%)] NPA: 98.1% (52/53)[95% Confidence Interval: (90.1,99.7%)]				

Agreement of the assays may vary depending on the study design, comparative assay, and population tested.

Distribution of target and differential disease samples and antibody positivity rates:

		ADVIA Centaur aTPOII	**Predicate**
Target conditions	**N**	**n POS (%)**	**n POS (%)**
Graves' Disease	**100**	**60 (60%)**	**63 (63%)**
Hashimoto's Thyroiditis	**107**	**88 (82.2%)**	**89 (83.2%)**
Total	**207**	**148 (71.5%)**	**152 (73.4%)**
Differential diagnosis controls			
Multinodular goiter	**62**	**2 (3.2%)**	**4 (6.5%)**
Non-autoimmune thyroid disease (NAITD)	**95**	**15 (15.8%)**	**21 (22.1%)**
Thyroid Carcinoma	**20**	**4 (20.0%)**	**4 (20.0%)**
Silent Painless Thyroiditis	**20**	**7 (35.0%)**	**8 (40.0%)**
Subacute Thyroiditis	**10**	**0 (0.0%)**	**0 (0.0%)**
Hepatitis C virus (HCV)	**20**	**0 (0.0%)**	**0 (0.0%)**
Hepatitis B virus (HBV)	**20**	**7 (35.0%)**	**7 (35.0%)**
Human immunodeficiency virus (HIV)	**20**	**1 (5.0%)**	**5 (25.0%)**

		ADVIA Centaur aTPOII	Predicate
Diabetes Type 1	**10**	**2 (20.0%)**	**3 (30.0%)**
Sjogren's Syndrome	**10**	**1 (10.0%)**	**1 (10.0%)**
Primary Biliary Cholangitis	**10**	**9 (90.0%)**	**9 (90.0%)**
Systemic Sclerosis	**10**	**4 (40.0%)**	**4 (40.0%)**
Pernicious Anemia	**10**	**1 (10.0%)**	**2 (20.0%)**
Rheumatoid Arthritis	**10**	**0 (0.0%)**	**0 (0.0%)**
Systemic Lupus Erythematosus (SLE)	**10**	**1 (10.0%)**	**2 (20.0%)**
Addison's Disease	**10**	**0 (0.0%)**	**2 (20.0%)**
Miscarriage	**20**	**20 (100.0%)**	**20 (100.0%)**
Pregnancy – 1st Trimester	**31**	**1 (3.2%)**	**2 (6.5%)**
Pregnancy – 2nd Trimester	**30**	**7 (23.3%)**	**7 (23.3%)**
Pregnancy – 3rd Trimester	**31**	**2 (6.5%)**	**4 (12.9%)**
Total	**459**	**84 (18.3%)**	**105 (22.9%)**

10. CONCLUSION

The ADVIA Centaur aTPOII assay is substantially equivalent to the predicate device, the Architect Anti-TPO (K052407).