510(k) SUBSTANTIAL EQUIVALENCE DETERMINATION
DECISION SUMMARY

A. 510(k) Number: K161964

B. Purpose for Submission: To support the addition of the pediatric population testing to the Intended Use/Indications for Use for the ADVIA Centaur® HAV lgM assay cleared under K081716 (originally approved under PMA P040018).

C. Measurand: Hepatitis A virus (HAV) IgM antibodies

D. Type of Test: Enzyme immunoassay

E. Applicant: Siemens Healthcare Diagnostics

F. Proprietary and Established Names: ADVIA® Centaur HAV lgM Assay

G. Regulatory Information:

1. Regulation section: 21 CFR §866.3310; Hepatitis A virus (HAV) serological assays
2. Classification: Class II
3. Product code: LOL; Hepatitis A test (antibody and IgM antibody)
4. Panel: Microbiology

H. Intended Use:

1. Intended use(s):

   ADVIA Centaur, ADVIA Centaur XP, and ADVIA Centaur XPT systems:

   The ADVIA Centaur® HAV IgM (aHAVM) assay is an in vitro diagnostic immunoassay for the qualitative determination of IgM response to the hepatitis A virus (HAV) in human pediatric (2 through 21 years) and adult serum or plasma (potassium EDTA, lithium or sodium heparinized) using the ADVIA Centaur, ADVIA Centaur XP, and ADVIA Centaur XPT systems. This assay is intended for use as an aid in the diagnosis of acute or recent infection (usually 6 months or less) with hepatitis A virus.

   Assay performance characteristics have not been established for immunocompromised or immunosuppressed patients, cord blood, or patients less than 2 years of age.

   ADVIA Centaur CP system:

   The ADVIA Centaur® HAV IgM (aHAVM) assay is an in vitro diagnostic immunoassay for the qualitative determination of IgM response to the hepatitis A virus (HAV) in human pediatric (2 through 21 years) and adult serum or plasma (potassium EDTA,

lithium or sodium heparinized) using the ADVIA Centaur CP system. This assay is intended for use as an aid in the diagnosis of acute or recent infection (usually 6 months or less) with hepatitis A virus.

Assay performance characteristics have not been established for immunocompromised or immunosuppressed patients, cord blood, or patients less than 2 years of age.

2. Indication(s) for use:

   Same as Intended Use

3. Special conditions for use statement(s):

   For prescription use only.

4. Special instrument requirements:

   ADVIA Centaur, ADVIA Centaur XP, ADVIA Centaur XPT, or ADVIA Centaur CP system.

I. Device Description:

The ADVIA Centaur HAV IgM assay is an IgM capture immunoassay. In the first step, the sample is diluted using Multi-Diluent 2. After sample dilution, biotinylated anti-human IgM monoclonal antibody is added to the cuvette binding lgM from the diluted patient sample. The lgM complex is then captured by the addition of streptavidin coated magnetic latex particles (MLP). The lgM-MLP is washed and resuspended. The anti-HAV lgM captured on the Solid Phase is then detected by the sequential addition of HAV antigen and acridinium ester-labeled mouse anti-HAV antibody.

J. Substantial Equivalence Information:

1. Predicate device name(s):

   VITROS® Anti-HAV Immunodiagnostic Products IgM Reagent Pack

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

   K060770

3. Comparison with predicate:

Similarities:

Item	Modified Device: ADVIA Centaur HAV IgM Assay	Predicate Device: VITROS Immunodiagnostic Products Anti-HAV IgM Reagent
Intended Use	For the qualitative determination of IgM response to hepatitis A virus (anti-HAV IgM) in human, pediatric (2 through 21 years) and adult samples	For the qualitative determination of IgM antibodies to hepatitis A virus (anti-HAV IgM) in human adult and pediatric samples
Indications for Use	This assay is intended for use as an aid in the diagnosis of acute or recent infection (usually 6 months or less) with hepatitis A virus.	The assay is indicated for testing specimens from individuals who have signs and symptoms consistent with acute hepatitis. Assay results, in conjunction with other clinical information, may be used for the laboratory diagnosis of individuals with acute or recent hepatitis A.
Sample type	Serum and Plasma	Same
Measurement	Qualitative	Same
Assay Principle	IgM capture immunoassay	Same
Technology	Chemiluminescence	Same

Differences:

Item	Modified Device: ADVIA Centaur HAVT Assay	Predicate Device: VITROS Immunodiagnostic Products Anti-HAV IgM Reagent
Standardization / Traceability	The cutoff for the ADVIA Centaur HAV IgM assay was verified based on results of Receiver-Operator characteristics (ROC) Curve and clinical agreement generated from the clinical studies.	Traceable to an in-house reference calibrator which has been value assigned to optimize the clinical sensitivity and specificity performance.
Detection Antibody	Mouse monoclonal anti-HAV antibody Fab fragments labeled with acridinium ester	Mouse monoclonal anti-HAV antibody labeled with horseradish peroxidase (HRP)
Capture Antibody	Mouse monoclonal to anti-human IgM antibody labeled with biotin	Mouse monoclonal to anti-human IgM antibody labeled with biotin

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

L. Test Principle: Enzyme Immunoassay

M. Performance Characteristics (if/when applicable):

NOTE: Performance Characteristics of the ADVIA Centaur HAV IgM assay other than the pediatric population studies have been established under parent documents, P040018 and K081716.

1. Analytical performance:

   a. *Precision/Reproducibility:*

      See the Summary of Safety and Effectiveness Data for P040018.

   b. Linearity/assay reportable range: N/A

   c. Traceability, Stability, Expected values (controls, calibrators, or methods): N/A

   d. Detection limit: N/A

   e. Analytical specificity:

      Cross Reactivity: See the Summary of Safety and Effectiveness Data for P040018.

      Interferences: See the Summary of Safety and Effectiveness Data for P040018.

   f. Assay cut-off:

      See the Summary of Safety and Effectiveness Data for P040018.

2. Comparison studies:

   a. Method comparison with predicate device:

      Pediatric Patient Testing**:** The following comparison study was performed to demonstrate that the pediatric population can be used in the ADVIA Centaur HAV IgM assay. One hundred and thirty-two (132) pediatric serum samples (male and female, age range from 2 to 21 years), from suspected positive or high risk population were evaluated with the ADVIA Centaur HAV IgM assay and another commercially available assay. The percent agreement results are shown in the following table:

ADVIA Centaur Anti-HAV IGM Assay	Comparative anti-HAV IgM Assay			
	Reactive	**Borderline Reactive**	**Non- reactive**	**Total**
Reactive	30	0	0	30
Equivocal	0	1	1	2
Non- reactive	1	2*	97	100
Total	31	3	98	132

* Included in the total number of samples (n=33) in the calculation of % Positive Agreement

% Positive Agreement = 90.9% (30/33)
95% Confidence Interval = 75.67% to 98.08%
% Negative Agreement = 98.98% (97/98)
95% Confidence Interval = 94.45% to 99.97%

Prospective Study: See the Summary of Safety and Effectiveness Data for P040018.

b. Matrix comparison: N/A

3. Clinical studies:

   a. *Clinical Sensitivity:* N/A

   b. Clinical specificity: N/A

   c. Other clinical supportive data (when a. and b. are not applicable): N/A

4. Clinical cut-off**:** N/A

5. Expected values/Reference range:

   See the Summary of Safety and Effectiveness Data for P040018.

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.