

**510(k) SUBSTANTIAL EQUIVALENCE DETERMINATION
DECISION SUMMARY
ASSAY AND INSTRUMENT COMBINATION TEMPLATE**

A. 510(k) Number:

k081767

B. Purpose for Submission:

The indication for use was modified to remove the specification that the device is for use in patients at > 34 weeks gestation.

C. Measurand:

Placental alpha-1 microglobulin

D. Type of Test:

Qualitative immunoassay

E. Applicant:

Amnisure International LLC

F. Proprietary and Established Names:

AmniSure™ ROM (Rupture of Fetal Membranes) Test

G. Regulatory Information:

1. Regulation section:

21 CFR 862.1550, Urinary pH

2. Classification:

Class I, meets limitations of exemptions under 21 CFR 862.9 for changes to the indication for use and near patient testing.

3. Product code:

NQM

4. Panel:

Chemistry, 75

H. Intended Use:

1. Intended use(s):

The test is for use by healthcare professionals to aid in the detection of ROM (rupture of membrane) in pregnant women when patients report signs, symptoms or complaints suggestive of ROM.

2. Indication(s) for use:

See intended use, above.

3. Special conditions for use statement(s):

For prescription use only

4. Special instrument requirements:

No instrument required.

I. Device Description:

Each individual test kit contains a sterile vaginal swab, a transparent plastic vial with solvent (water solvent containing 0.9% NaCl, 0.1% Triton X 100 and 0.01% sodium azide), and a lateral flow dipstick. The test strip (dipstick) is a standard lateral flow device. Its strip contains colloidal gold labeled mouse monoclonal antibodies to PAMG-1, immobilized mouse monoclonal antibodies (test region), and rabbit anti-mouse anti-immunoglobulin antibodies (control region).

J. Substantial Equivalence Information:

1. Predicate device name(s):

AmniSure™ ROM (Rupture Of fetal Membranes) Test

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

k030849

3. Comparison with predicate:

The device is physically the same as the predicate. The indication for use was modified to remove the limitation that the device is for use in patients at > 34 weeks gestation.

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

None were referenced.

L. Test Principle:

The device uses lateral flow immunochromatography

M. Performance Characteristics (if/when applicable):

1. Analytical performance:

Analytical performance of this device was reviewed under k030849. Additional testing for samples containing high levels of analyte was included in this submission. Additional studies to support use of the device in patients at ≤ 34 weeks are summarized in Section 3, clinical studies, below.

a. Precision/Reproducibility:

b. Linearity/assay reportable range:

To test for high dose hook effect, samples with up to 200 ug/mL (which is diluted to 40 ug/mL during the test procedure) were tested and found to yield positive results.

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

e. Analytical specificity:

f. Assay cut-off:

2. Comparison studies:

a. Method comparison with predicate device:

The predicate device is the same test kit. See clinical studies, below.

b. Matrix comparison:

Not applicable – vaginal swabs are the only intended use matrix

3. Clinical studies:

a. *Clinical Sensitivity:*

b. *Clinical specificity:*

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

Descriptions and data from 3 clinical studies were submitted in the 510(k) to support removal of the limitation excluding use of the test for women at gestational ages < 34 weeks .

Women reporting signs and symptoms of premature rupture of fetal membrane were evaluated by standard clinical assessment (“control method”) and by the Amnisure assay. The control method included standard clinical evaluation for: visual assessment for presence or absence of pooling, nitrazine testing of pH, and presence or absence of ferning. During the routine examination healthcare professionals also collected samples for AmniSure testing using the vaginal swab and solvent provided and the reading was performed by another investigator at the clinical site. Results of diagnoses based on control methods were masked from the investigator/physicians doing the testing and interpretation of the Amnisure test. If two out of three of the control procedures were positive for ROM, this was considered positive. However, follow-up re-testing of equivocal cases by control methods was performed as clinically needed according to the physician (and independently of Amnisure results). Following delivery, a clinical assessment of whether the patient had PROM (or PPRM) was made without knowledge of the Amnisure result. Among the 3 studies there were a total of 108 women at gestational ages < 34 weeks.

Inclusion criteria for the patients were patient reporting signs or symptoms suggestive of PROM or PPRM.

Exclusion criteria were the following:

- Active vaginal bleeding from any source
- Placenta previa

Study results:

In the first study (published in *Obstetrics and Gynecology*. 2007; 109; 634), 183 symptomatic patients were evaluated using AmniSure. There were 53 patients at gestational ages less than 34 weeks. Results are summarized below:

Study #1			
Gestational age	Agreement of AmniSure with positive (clinical) results	Agreement of AmniSure with negative (clinical) results	Overall agreement
< 24 weeks	13/13	5/7	
24-34 weeks	24/25	8/8	
≥ 34 weeks	99% (120/121)	89% (8/9)	
Overall	99% (157/159)	88% (21/24)	97%

In the second study, 203 symptomatic patients were evaluated using AmniSure. Forty-one of these patients were at gestational ages < 34 weeks. Clinical control method results were in agreement with Amnisure results for all except one patient (whose gestational age was > 34 weeks).

The third study included 46 patients (14 with gestational ages < 34 weeks). In this study all results obtained with AmniSure were in agreement with the control methods.

Pooled data from the 3 studies for < 34 weeks gestational age shows: 98% percent agreement with current methods among positive results (95% confidence intervals 91.6% to 99.9%) and 96% agreement with current methods among negative results (95% confidence intervals 86.3 to 98.9)

Pooled data from the 3 studies for ≥ 34 weeks shows: 99% percent agreement with current methods among both positive and negative results (95% confidence intervals of 96.76 to 99.84% and 95.42 to 99.95% for positive and negative results, respectively).

The number of samples <24 weeks, between 24-34, and > 34 weeks gestational age for the first study can be found in the table of results, above, for that study.

A table of gestational ages for the second and third studies are shown below:

Gestational Age	Number of patients
15	2
16-20	2
21-24	10
25-29	14
30-33	27
≥ 34	174

4. Clinical cut-off:

The clinical cutoff was reviewed under k030849.

5. Expected values/Reference range:

Not applicable

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.