

SPECIAL 510(k): Device Modification
ODE Review Memorandum (Decision Making Document is Attached)

To: THE FILE

RE: DOCUMENT NUMBER k052932

This 510(k) submission contains information/data on modifications made to the SUBMITTER'S own Class II, Class III or Class I devices requiring 510(k). The following items are present and acceptable (delete/add items as necessary):

1. The name and 510(k) number of the SUBMITTER'S previously cleared device. (For a preamendments device, a statement to this effect has been provided.)
2. Submitter's statement that the **INDICATION/INTENDED USE** of the modified device as described in its labeling **HAS NOT CHANGED** along with the proposed labeling which includes instructions for use, package labeling, and, if available, advertisements or promotional materials (labeling changes are permitted as long as they do not affect the intended use).
3. A description of the device **MODIFICATION(S)**, including clearly labeled diagrams, engineering drawings, photographs, user's and/or service manuals in sufficient detail to demonstrate that the **FUNDAMENTAL SCIENTIFIC TECHNOLOGY** of the modified device **has not changed**.

The changes identified were as follows:

1. A direct conjugate format will replace an indirect conjugate format making the test simpler to perform. The detecting antibody is directly labeled with horseradish peroxidase IgG:HRP conjugate which would reduce the number of incubation and washing steps in the test procedure.
2. To replace a two-component substrate with a one-component substrate, making the test simpler to perform. Both the one and two component substrates use tetramethylbenzidine and peroxide. The one-component substrate has the same reactive components but was determined to give higher color intensity than the original two-component substrate. The end result is an enhancement of the color reactivity that slightly increases OD readings, but does not alter performance characteristics.
3. The stop solution was weakened from 1M sulfuric acid to 0.6N (equiv. to 3M) sulfuric acid rendering the reagent to be less caustic.
4. The addition of a sample diluent to accommodate both fresh and preserved fecal samples. The diluent makes the test compatible with samples preserved in sodium acetate formalin (SAF), a preservative not previously claimed for use with the predicate test.

Reagent	Cryptosporidium Test (Old device)	Cryptosporidium II (Modified device)
Format	Indirect conjugate format	Direct conjugate format
Diluent	1X Wash buffer	Buffered protein solution
Substrate	One drop of substrate A (tetramethylbenzidine substrate) followed by one drop of Substrate B (peroxide)	Two drops of one component Substrate containing tetramethylbenzidine substrate and peroxide
Stop solution	1M sulfuric acid	0.6N sulfuric acid
Negative control	1X wash buffer	diluent
Dilutions	None for preserved, 1:5 for fresh	1:3 for preserved, 1:15 for fresh
Detecting antibody	Rabbit anti- <i>Cryptosporidium</i> oocyst (Affinity purified rabbit antibody)	N/A-unconjugated detecting antibody is not utilized in this test
Conjugate	Goat-anti rabbit IgG:HRP	Rabbit anti- <i>Cryptosporidium</i> oocyst:HRP (Affinity purified rabbit antibody conjugated to horseradish

		peroxidase)
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4. **Comparison Information** (similarities and differences) to applicant's legally marketed predicate device including, labeling, intended use, physical characteristics, and performance characteristics which included a comparison of this device test results to the legally marketed predicate device using 68 positive and 282 negative specimens in one study and 44 positive and 141 negative specimens in another study; freeze-thaw, inter- and intra- assay precision studies, cross reactivity studies, validation testing, and multi-site proficiency testing.
5. A **Design Control Activities Summary** which includes:
 - a) Identification of Risk Analysis method(s) used to assess the impact of the modification on the device and its components, and the results of the analysis.
 - b) Based on the Risk Analysis, an identification of the verification and/or validation activities required, including methods or tests used and acceptance criteria to be applied.

Risk analysis of Modification(s)	Impact/risk	Validation methods
Indirect to Indirect format	Low-no change in antibody, studies demonstrated no change in performance	sensitivity, specificity, reproducibility studies (inter and intra assay precision), and cross reactivity study
Addition of a sample diluent	Low-studies demonstrated no change in performance and allows for use of SAF preserved specimens not previously claimed for use with the predicate test.	sensitivity, freeze thaw, and reproducibility studies
Change from two-component to one-component Substrate	Low-studies demonstrated no change in performance. One component was determined to give a higher color intensity than original two component substrate	sensitivity, specificity, reproducibility, and cross reactivity studies
Stop solution 1M to 0.6N sulfuric acid	Low-studies demonstrated no change in performance, reagent less caustic to the user	sensitivity and reproducibility studies
Dilutions-larger dilution of fecal samples is required in the new test device	Low-studies demonstrated no change in performance	sensitivity and reproducibility studies
Detecting antibody	Low- no change in antibody, studies demonstrated no change in performance	sensitivity, reproducibility, and cross reactivity studies
Conjugate	Low- studies demonstrated no change in performance	sensitivity, reproducibility, and cross reactivity studies

- c) A declaration of conformity with design controls. The declaration of conformity should include:
 - i) A statement signed by the individual responsible, that, as required by the risk analysis, all verification and validation activities were performed by the designated individual(s) and the results demonstrated that the predetermined acceptance criteria were met, and
 - ii) A statement signed by the individual responsible, that the manufacturing facility is in conformance with design control procedure requirements as specified in 21 CFR 820.30 and the records are available for review.

6. A Truthful and Accurate Statement, a 510(k) Summary or Statement and the Indications for Use Enclosure (and Class III Summary for Class III devices).

The labeling for this modified subject device has been reviewed to verify that the indication/intended use for the device is unaffected by the modification. In addition, the submitter's description of the particular modification(s) and the comparative information between the modified and unmodified devices demonstrate that the fundamental scientific technology has not changed. The submitter has provided the design control information as specified in The New 510(k) Paradigm and on this basis, I recommend the device be determined substantially equivalent to the previously cleared (or their preamendment) device.

Comments: Recommend SE determination
