JUN - 2 2006

## 510(k) SUMMARY

This summary of 510(k) safety and effectiveness information is being submitted in accordance with the requirements of SMDA 1990 and 21 CFR 807.92.

The assigned 510(k) number is: k060641

**DATE:** February 28, 2006

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**PRODUCT TRADE NAME:** Bio-Rad Laboratories Platelia™ *Aspergillus* EIA

**COMMON NAME:** *Aspergillus* Antigen EIA

**CLASSIFICATION NAME:** Antigen, Galactomannan, *Aspergillus* spp.

**PREDICATE DEVICE:** Platelia™ *Aspergillus* EIA

## DEVICE DESCRIPTION

The Platelia™ *Aspergillus* EIA is a one-stage immunoenzymatic sandwich microplate assay which detects galactomannan in human serum. The assay uses rat EBA-2 monoclonal antibodies, which are directed against *Aspergillus* galactomannan, and have been characterized in previous studies [10, 16]. The monoclonal antibodies are used to coat the wells of the microplate and bind the antigen, and to detect the antigen bound to the sensitized microplate (conjugate reagent: peroxidase-linked monoclonal antibodies).

Serum samples are heat-treated in the presence of EDTA in order to dissociate immune complexes and to precipitate serum proteins that could possibly interfere with the test [9]. The treated serum samples and conjugate are added to the wells coated with monoclonal antibodies, and incubated. A monoclonal antibody - galactomannan - monoclonal antibody / peroxidase complex is formed in the presence of galactomannan antigen. The strips are washed to remove any unbound material. Next, the substrate solution is added, which will react with the complexes bound to the well to form a blue color reaction. The enzyme reaction is stopped by the addition of acid, which changes the blue color to yellow. The absorbance (optical density) of specimens and controls is determined with a spectrophotometer set at 450 and 620/630 nm wavelength.

## INTENDED USE

The Platelia™ *Aspergillus* EIA is an immunoenzymatic sandwich microplate assay for the detection of *Aspergillus* galactomannan antigen in adult and pediatric serum samples.

## INDICATIONS FOR USE

The Platelia™ *Aspergillus* EIA is a test which, when used in conjunction with other diagnostic procedures such as microbiological culture, histological examination of biopsy samples and radiographic evidence, can be used as an aid in the diagnosis of Invasive Aspergillosis.

## TECHNOLOGICAL CHARACTERISTICS

The following tables summarize similarities and differences between the Platelia™ *Aspergillus* EIA (Catalog #62793) and Platelia™ *Aspergillus* EIA (k023857):

***Table 1(a) Similarities between intended use***

| **Similarities in Function and Use** | **Platelia™ *Aspergillus* EIA, Catalog 62793** | **Platelia™ *Aspergillus* EIA (k023857)** |
|---|---|---|
| Intended Use | Galactomannan antigen detection in serum. | Galactomannan antigen detection in serum. |
| Matrix | Serum | Serum |

***Table 1(b) Differences between intended use***

| **Differences in Function and Use** | **Platelia™ *Aspergillus* EIA, Catalog 62793** | **Platelia™ *Aspergillus* EIA (k023857)** |
|---|---|---|
| Intended Use | Detection of galactomannan antigen in adult and pediatric serum samples. | Detection of *Aspergillus* galactomannan antigen in serum samples. |

*Table 2 Similarities between reagents and materials*

| **Similarities in Components / Materials** | **Platelia™ *Aspergillus* EIA, Catalog 62793** | **Platelia™ *Aspergillus* EIA (k023857)** |
|---|---|---|
| Microplate | 96 well microplate – antibody coated microwells | 96 well microplate – antibody coated microwells |
| Reagents | Conjugate, Wash Buffer, Substrate, TMB Chromogen, Sample Diluent, Positive Control, Stop Solution. | Conjugate, Wash Buffer, Substrate, TMB Chromogen, Sample Diluent, Positive Control, Stop Solution. |

*Table 3(a) Similarities between assay procedures.*

| **Similarities in Assay Procedures** | **Platelia™ *Aspergillus* EIA, Catalog 62793** | **Platelia™ *Aspergillus* EIA (k023857)** |
|---|---|---|
| Incubation temperature of the microplate after addition of the conjugate and the treated sera. | Incubation temperature: 37°C | Incubation temperature: 37°C |
| Incubation time of the microplate after addition of the conjugate and the treated sera. | Incubation time: 90 ± 5 minutes | Incubation time: 90 ± 5 minutes |

*Table 3(b) Differences between assay procedures.*

| **Differences in Assay Procedures** | **Platelia™ *Aspergillus* EIA, Catalog 62793** | **Platelia™ *Aspergillus* EIA (k023857)** |
|---|---|---|
| Method of treatment of the sera | Use of either heat block or boiling water bath for treatment of the sera. | Use of boiling water bath for treatment of the sera. |
| Time and temperature of treatment | Heat block : 120°C for 6 min<br>Boiling water bath: 100°C for 3 min | Boiling water bath: 100°C for 3 min |

*Table 4 Differences between Available Kit Configurations*

| Differences in Components / Materials | Platelia™ *Aspergillus* EIA, Catalog 62793 | Platelia™ *Aspergillus* EIA (k023857) |
|---|---|---|
| Available Configuration of Test Kits | Catalog # 62793 96 Test Kit | Catalog # 62793 96 Test Kit and Catalog # 62794 480 Test Kit |

*Table 5 Differences between Limitations of the Procedure*

| Differences in Limitations of the Procedure | Platelia™ *Aspergillus* EIA, Catalog 62793 | Platelia™ *Aspergillus* EIA (k023857) |
|---|---|---|
| Limitation | Warning regarding positive test results in patients being treated with Zosyn® and semi-synthetic β-lactams. | Warning regarding positive test results in patients being treated with Zosyn®. |

*Table 6 Differences between Reference Publications*

| Differences in Reference Publications | Platelia™ *Aspergillus* EIA, Catalog 62793 | Platelia™ *Aspergillus* EIA (k023857) |
|---|---|---|
| Publications | Publications by Ascioglu et al, Marr et al, Mattei et al and Upton et al added. | - |

## PERFORMANCE SUMMARY

### I. EXPECTED VALUES

The expected prevalence of Invasive Aspergillosis varies with the patient population; rates from 5-20% have been reported [4, 7].

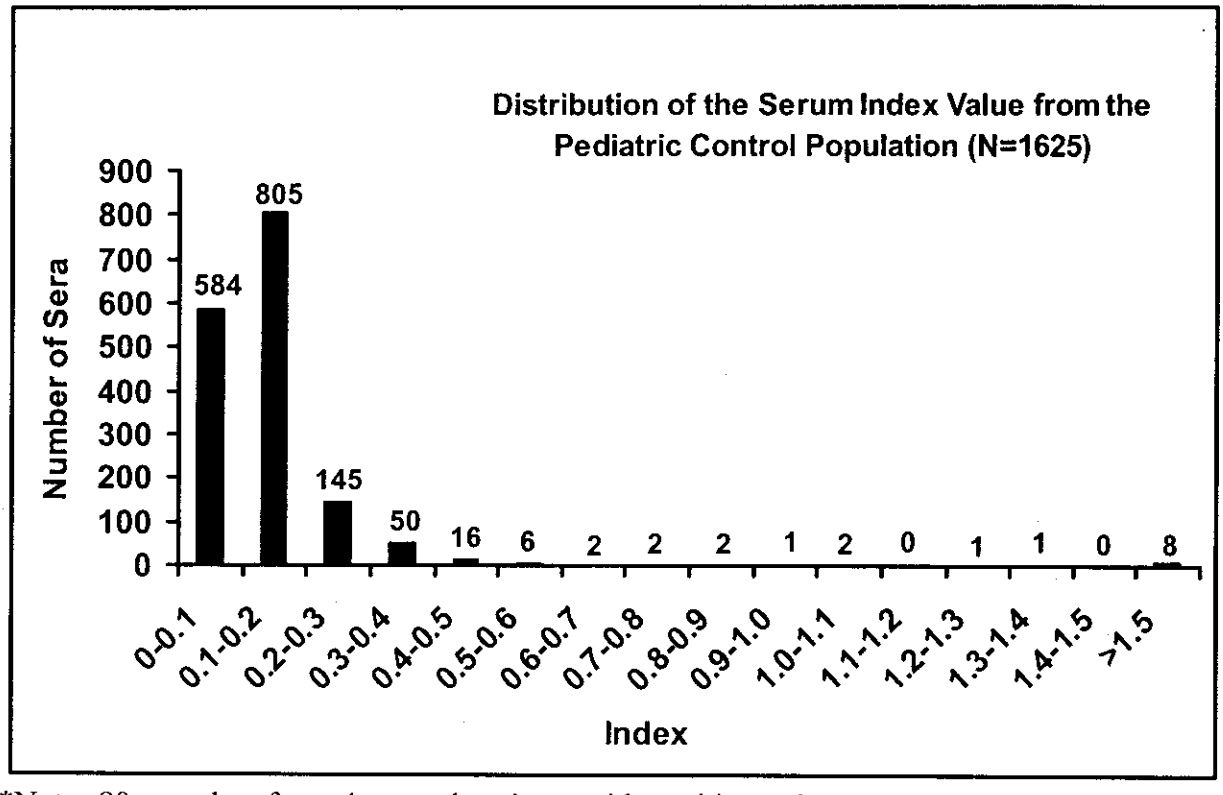
The following results have been obtained from clinical studies conducted on pediatric (age ≤ 21 years) patients in the United States and on adult patients (age >22 years) in North America.

### A.-Pediatrics

A clinical study was conducted on a total of 1954 serum samples from 129 immunocompromised pediatric (Age ≤ 21 years) patients, at high risk for Invasive Aspergillosis (IA) and patients diagnosed with Proven and Probable Invasive Aspergillosis, at three testing centers in the United States to determine the performance characteristics of the Platelia™ *Aspergillus* EIA. The distribution of index values for these populations is shown in the following charts:

***Pediatric Patients diagnosed without Invasive Aspergillosis (control population)***
A total of 1625* pediatric serum samples obtained from 108 immunocompromised pediatric patients at three testing centers in the United States were tested to determine the performance characteristics of the Platelia™ *Aspergillus* EIA. The distribution of index values for samples is shown in the following chart:

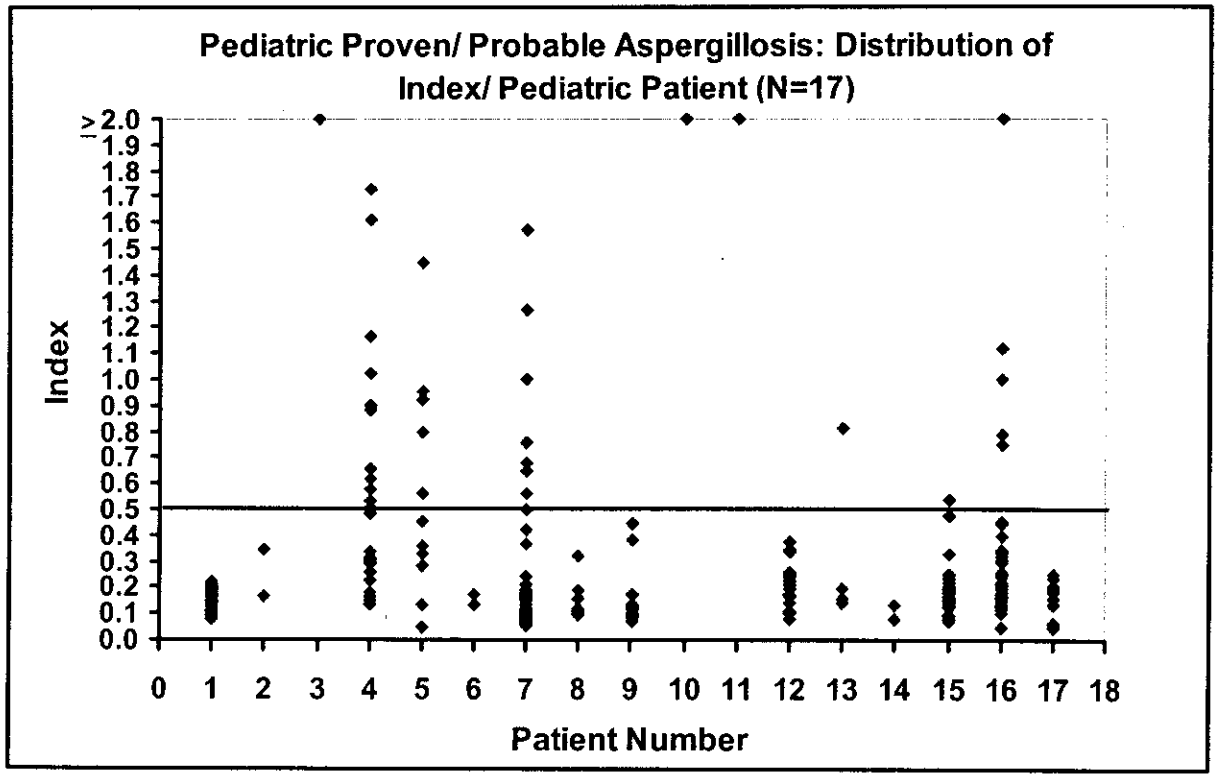
Figure 1




*Note: 80 samples, from 4 control patients with positive galactomannan antigen results coinciding with piperacillin / tazobactam (Zosyn®) therapy were excluded.

***Pediatric Patients with Invasive Aspergillosis***
The scatter plot depicts galactomannan assay results for the 249 serum samples from 17 patients in this study diagnosed with proven or probable Invasive Aspergillosis as defined by EORTC/NIAID definitions.
Not every serum sample from each patient is expected to be positive.
The expected prevalence of Invasive Aspergillosis varies with the patient population; rates from 5-20% have been reported[3, 6]. The prevalence rate of this study was 13.6%.

Figure 2



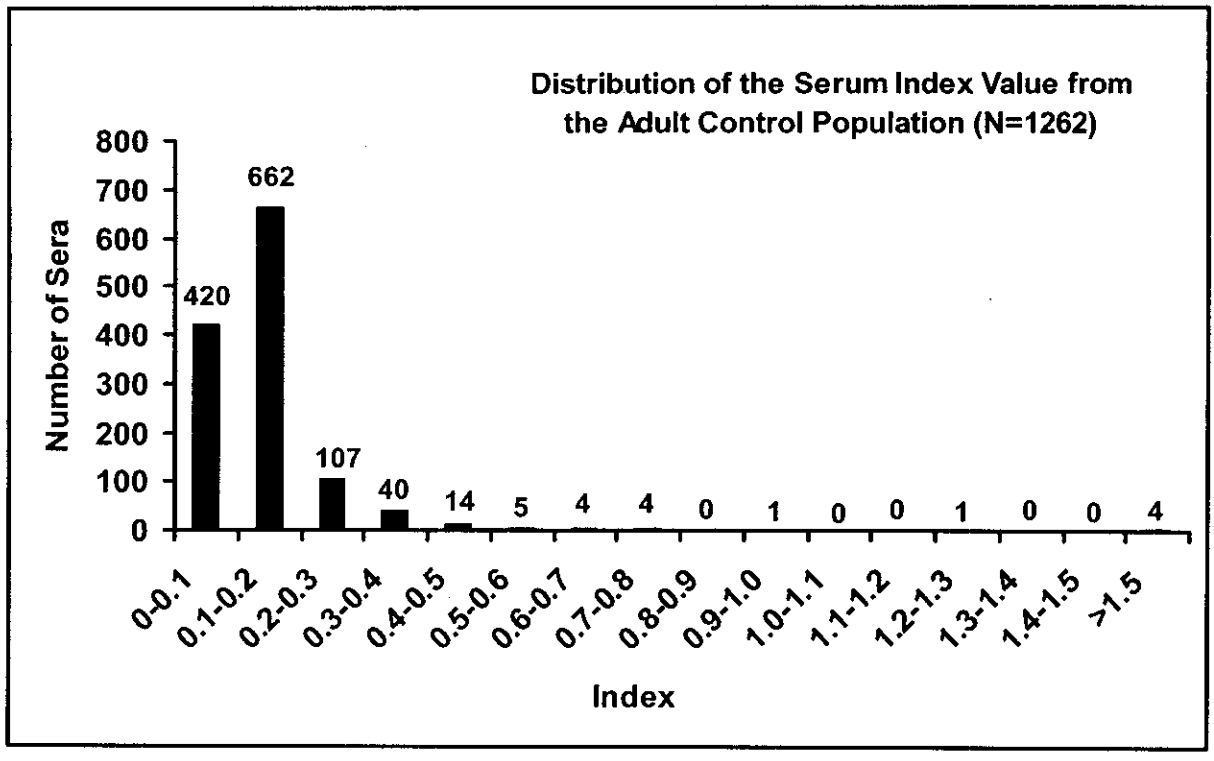

**B. Adults**

Note: Reproducibility Studies were previously presented in prior 510(k) submission (k023857) for this assay, no new reproducibility studies have been performed.

A clinical study was previously conducted on a total of 1724 serum samples from 172 bone marrow transplant (BMT) and leukemic patients diagnosed with and without Invasive Aspergillosis, at three testing centers in North America to determine the performance characteristics of the Platelia™ *Aspergillus* EIA. The distribution of index values for these populations is represented in the following charts.

***Adult Patients diagnosed without Invasive Aspergillosis (control population)***
A total of 1262 serum samples obtained from 143 bone marrow transplant (BMT) and leukemic patients at three testing centers in North America were previously tested with the Platelia™ *Aspergillus* EIA test. The distribution of index values is shown in the following chart.

Figure 3

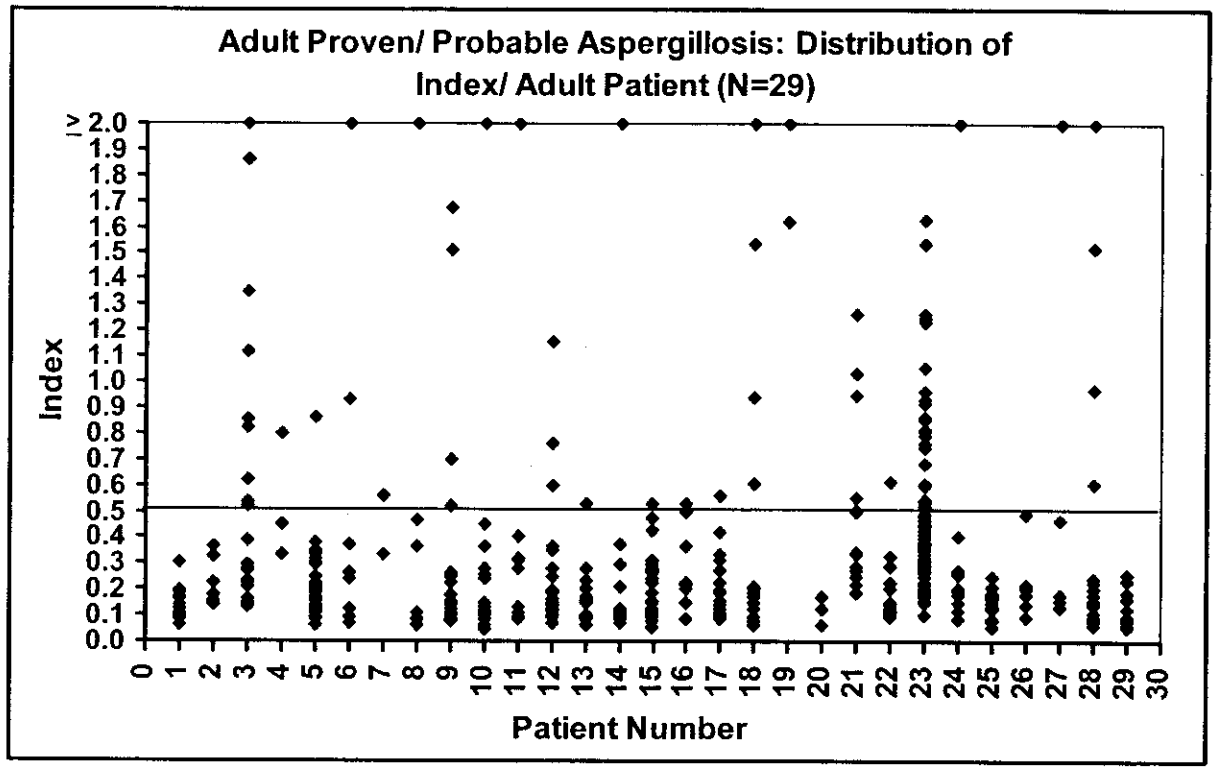



### *Adult Patients diagnosed with Invasive Aspergillosis*

Note: Reproducibility Studies were previously presented in prior 510(k) submission (k023857) for this assay, no new reproducibility studies have been performed.

This scatter plot depicts galactomannan assay results for the 462 serum samples from 29 patients in this study diagnosed with proven or probable Invasive Aspergillosis as defined by EORTC/NIAID definitions. Not every serum sample from each patient is expected to be positive. The expected prevalence of Invasive Aspergillosis varies with the patient population; rates from 5-20% have been reported [4, 7]. The prevalence rate for this previous study was 16.9%.

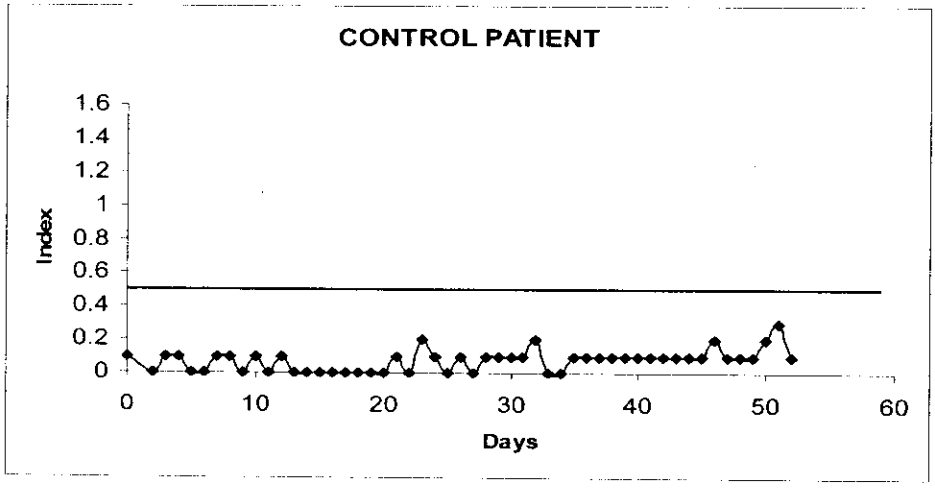
Figure 4




The following graphs represent examples of a patient without clinical signs or symptoms of Invasive Aspergillosis (negative for *Aspergillus*) and a patient with proven or probable Invasive Aspergillosis (positive for *Aspergillus*) respectively.

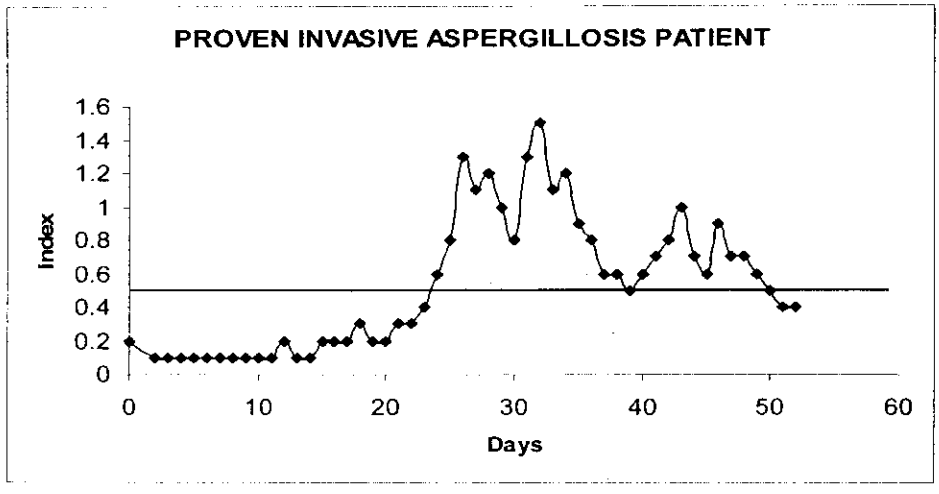
**Negative patient**

Figure 5



**Positive patient**

Figure 6




## II. REPRODUCIBILITY STUDIES

Note: Reproducibility Studies were previously presented in prior 510(k) submission (k023857) for this assay, no new reproducibility studies have been performed.

Inter-assay and Intra-assay variability for the Platelia™ *Aspergillus* EIA were determined in a study using a panel of 6 pooled patient serum samples (one negative, one low positive, two positive, and two high positive) obtained at 3 clinical trial sites in North America. Each of the 6 panel members was tested in triplicate (x3) on 3 different days, on one lot, at two sites (total number of replicates at each site = 9). Each of the 6 panel members was tested in duplicate (x2) on 3 different days, on 1 lot, at a third site (total number of replicates at the third site = 6). One (1) operator performed all precision testing at each site. The data were analyzed according to the National Committee for Clinical Laboratory Standards (NCCLS).

The mean optical density (OD) and mean index value, standard deviation (SD), percent coefficient of variation (%CV), within run precision (intraassay) and within site (inter-assay) precision for each panel member at each site are illustrated below in the following tables.

Site 1

| Panel Member | Neg | | Low Pos | | Pos #1 | | Pos #2 | | High Pos#1 | | High Pos #2 | | Neg Control | | CO Control | | Pos Control | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | OD | Index | OD | Index | OD | Index | OD | Index | OD | Index | OD | Index | OD | Index | OD | Index | OD | Index |
| N | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 3 | 3 | 6 | 6 | 3 | 3 |
| Mean | 0.052 | 0.09 | 0.445 | 0.74 | 0.702 | 1.17 | 0.931 | 1.563 | 1.227 | 2.06 | 2.887 | 4.83 | 0.046 | 0.08 | 0.606 | 1.00 | 2.216 | 3.67 |
| Within Run (intra-assay)[1] SD | 0.002 | 0.00 | 0.022 | 0.03 | 0.059 | 0.09 | 0.044 | 0.08 | 0.051 | 0.09 | 0.089 | 0.17 | N/A | N/A | 0.02 | 0.03 | N/A | N/A |
| %CV | N/A | N/A | 4.8% | 4.4% | 8.4% | 7.6% | 4.7% | 5.1% | 4.2% | 4.4% | 3.1% | 3.6% | N/A | N/A | 3.7% | 3.4% | N/A | N/A |
| Total (inter-assay)[2] SD | 0.036 | 0.04 | 0.051 | 0.08 | 0.070 | 0.14 | 0.044 | 0.25 | 0.058 | 0.29 | 0.169 | 0.58 | N/A | N/A | 0.102 | 0.03 | 0.317 | 0.12 |
| %CV | N/A | N/A | 11.5% | 10.4% | 10.0% | 11.6% | 4.7% | 15.7% | 4.7% | 14.3% | 5.9% | 11.9% | N/A | N/A | 16.9% | 2.8% | 14.3% | 3.3% |

Site 2

| Panel Member | Neg | | Low Pos | | Pos #1 | | Pos #2 | | High Pos#1 | | High Pos #2 | | Neg Control | | CO Control | | Pos Control | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | OD | Index | OD | Index | OD | Index | OD | Index | OD | Index | OD | Index | OD | Index | OD | Index | OD | Index |
| N | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 3 | 3 | 6 | 6 | 3 | 3 |
| Mean | 0.040 | 0.10 | 0.280 | 0.70 | 0.364 | 0.89 | 0.602 | 1.49 | 0.801 | 2.01 | 1.361 | 3.43 | 0.074 | 0.18 | 0.415 | 1.00 | 1.197 | 2.97 |
| Within Run (intra-assay)[1] SD | 0.006 | 0.01 | 0.041 | 0.09 | 0.023 | 0.07 | 0.045 | 0.11 | 0.046 | 0.10 | 0.047 | 0.11 | N/A | N/A | 0.00 | 0.01 | N/A | N/A |
| %CV | N/A | N/A | 14.5% | 13.0% | 6.4% | 7.6% | 7.5% | 7.1% | 5.7% | 4.8% | 3.5% | 3.2% | N/A | N/A | 1.1% | 1.1% | N/A | N/A |
| Total (inter-assay)[2] SD | 0.006 | 0.03 | 0.058 | 0.19 | 0.083 | 0.18 | 0.057 | 0.28 | 0.042 | 0.53 | 0.079 | 1.00 | N/A | N/A | 0.094 | 0.01 | 0.068 | 0.54 |
| %CV | N/A | N/A | 20.8% | 27.0% | 22.7% | 19.8% | 9.5% | 18.7% | 5.3% | 26.5% | 5.8% | 29.2% | N/A | N/A | 22.7% | 0.9% | 5.7% | 18.2% |

Site 3

| Panel Member | Neg | | Low Pos | | Pos #1 | | Pos #2 | | High Pos#1 | | High Pos #2 | | Neg Control | | CO Control | | Pos Control | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | OD | Index | OD | Index | OD | Index | OD | Index | OD | Index | OD | Index | OD | Index | OD | Index | OD | Index |
| N | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 3 | 3 | 6 | 6 | 3 | 3 |
| Mean | 0.049 | 0.10 | 0.388 | 0.81 | 0.652 | 1.36 | 0.830 | 1.73 | 1.158 | 2.41 | 2.378 | 4.96 | 0.059 | 0.12 | 0.480 | 1.00 | 1.652 | 3.45 |
| Within Run (intra-assay)[1] SD | 0.003 | 0.01 | 0.009 | 0.02 | 0.082 | 0.17 | 0.068 | 0.14 | 0.094 | 0.20 | 0.126 | 0.25 | N/A | N/A | 0.028 | 0.06 | N/A | N/A |
| %CV | N/A | N/A | 2.4% | 2.4% | 12.5% | 12.2% | 8.2% | 8.2% | 8.1% | 8.2% | 5.3% | 5.1% | N/A | N/A | 5.8% | 5.8% | N/A | N/A |
| Total (inter-assay)[2] SD | 0.012 | 0.03 | 0.078 | 0.13 | 0.068 | 0.15 | 0.104 | 0.25 | 0.082 | 0.15 | 0.111 | 0.34 | N/A | N/A | 0.028 | 0.04 | 0.056 | 0.23 |
| %CV | N/A | N/A | 20.0% | 15.8% | 10.5% | 11.1% | 12.5% | 14.3% | 7.1% | 6.2% | 4.7% | 6.8% | N/A | N/A | 5.8% | 4.1% | 3.4% | 6.6% |

N/A = not applicable

[1]NCCLS EP5-A, Vol. 19, No. 2, Page 24, Equation (C2)

[2]NCCLS EP5-A, Vol. 19, No. 2, Page 25, Equation (C3) and Equation (C4)

## III. CROSS-REACTIVITY STUDIES

Note: Cross-Reactivity Studies were previously presented in prior 510(k) submission (k023857) for this assay, no new cross-reactivity studies have been performed.

A study to evaluate the effect of potentially interfering medical conditions unrelated to Invasive Aspergillosis was performed with one lot of the Platelia™ *Aspergillus* EIA kit. The following serum samples were tested for cross-reactivity with the Platelia™ *Aspergillus* EIA. A total of 151 sera were tested.

| Pathology | # Samples Tested | # Positives |
|---|---|---|
| Rheumatoid Factor | 10 | 0 |
| ANA Positive | 10 | 0 |
| IgG Hypergammaglobulinemia | 10 | 0 |
| IgM Hypergammaglobulinemia | 10 | 0 |
| Cancer* | 11 | 0 |
| Non-Viral Cirrhosis (primary biliary; alcohol induced; drug induced) | 10 | 0 |
| Multiple Transfusions | 10 | 0 |
| Multiparous Females | 10 | 0 |
| HAV | 10 | 0 |
| HCV | 10 | 0 |
| Rubella | 10 | 0 |
| CMV | 10 | 0 |
| Syphilis (RPR+) | 10 | 0 |
| Toxoplasmosis | 10 | 0 |
| Mycoplasma | 10 | 0 |

* One each of bladder, breast(2), colon, endometrial, lung, prostate, renal, and squamous(3).

## IV. PERFORMANCE EVALUATION STUDIES

Additional clinical testing to evaluate the specificity and sensitivity of the Platelia™ Aspergillus EIA was conducted at 3 clinical sites located in the United States for the pediatric (Age ≤ 21 years ) population. This testing was performed in addition to the testing done for prior submission (k023857) for adult patients. The study was conducted using samples from the following patient populations*:

- patients without signs of Invasive Aspergillosis
- patients with probable Invasive Aspergillosis
- patients with proven Invasive Aspergillosis

* The Invasive Fungal Infection Cooperative Group (IFICG) of the European Organization for Research (EORTC) and the Mycosis Study Group (MSG of the National Institute of Allergy and Infectious Diseases (NIAID) have defined criteria for diagnosis of Invasive Aspergillosis (IA) in patients with hematologic malignancy or hematopoetic stem cell transplant.

*Proven Invasive Aspergillosis is defined by positive microbiological culture obtained by sterile procedure from the site affected, and histopathological demonstration of the appropriate morphological forms in a host with symptoms attributed to the fungal infection.*

*Probable Invasive Aspergillosis is defined as at least one microbiological criterion, **and** one major or two minor clinical criteria from a site consistent with infection, in a host*

*with symptoms attributed to the fungal infection.*

*Possible Invasive Aspergillosis is defined as at least one microbiological criterion, **or** one major or two minor clinical criteria from a site consistent with infection, in a host with symptoms attributed to the fungal infection*

## SENSITIVITY

A. PEDIATRICS

Results from this study have been analyzed in terms of patient sensitivity. Sensitivity testing was conducted using the Platelia™ *Aspergillus* EIA at three sites on a combined total of 17 immunocompromised pediatric patients diagnosed with Proven or Probable Invasive Aspergillosis.
Table 3

| DIAGNOSIS | NUMBER OF PATIENTS | SENSITIVITY | 95% CONFIDENCE INTERVAL |
|---|---|---|---|
| Proven Aspergillosis | 9 | 44.4% (4/9) | 18.9-73.3% |
| Probable Aspergillosis | 8 | 62.5% (5/8) | 30.6-86.3% |
| Combined Proven and Probable Aspergillosis | 17* | 52.9% (9/17) | 31.0-73.8% |

*Note: 9 of the 17 patients gave negative *Aspergillus* galactomannan antigen results. All of the 9 patients with negative *Aspergillus* galactomannan antigen results received therapy with multiple antifungal agents. The concomitant use of mold-active anti-fungal therapy in some patients with Invasive Aspergillosis may result in reduced sensitivity [13].

B. ADULTS

Note: Reproducibility Studies were previously presented in prior 510(k) submission (k023857) for this assay, no new reproducibility studies have been performed.

Sensitivity testing was previously conducted using the Platelia™ *Aspergillus* EIA at three sites on a combined total of 29 Bone Marrow Transplant (BMT) and Leukemia adult patients diagnosed with Proven or Probable Invasive Aspergillosis.

Table 4

| DIAGNOSIS | NUMBER OF PATIENTS | SENSITIVITY | 95% CONFIDENCE INTERVAL |
|---|---|---|---|
| Proven Aspergillosis | 11 | 81.8% (9/11) | 52.3-94.9% |
| Probable Aspergillosis | 18 | 77.8% (14/18) | 54.8-91.0% |
| Combined Proven and Probable Aspergillosis | 29 | 79.3% (23/29) | 61.6-90.2% |

## SPECIFICITY

SPECIFICITY BY PEDIATRIC PATIENTS

Specificity testing was conducted using the Platelia™ *Aspergilllus* EIA at three sites on a combined total of 108* immunocrompomised pediatric patients without signs of Invasive Aspergillosis (control patients).

Table 5

| SITE | NUMBER OF PATIENTS | SPECIFICITY | 95% CONFIDENCE INTERVAL |
|---|---|---|---|
| 1 | 44 | 86.4 % (38/44) | 73.3-93.6% |
| 2 | 59 | 86.4%(51/59) | 75.5-93.0% |
| 3 | 5 | 100% (5/5) | 56.6-100% |
| Combined Sites | 108 | 87.0%(94/108) | 79.4-92.1% |

*Note: 4 patients with positive galactomannan antigen results coinciding with piperacillin / tazobactam therapy were excluded.

SPECIFICITY BY PEDIATRIC SAMPLES

Specificity testing was conducted using the Platelia™ *Aspergilllus* EIA at three sites on a combined total of 1625* samples obtained from 108 immunocrompomised pediatric patients without signs of Invasive Aspergillosis (control patients).

Table 6

| SITE | NUMBER OF SAMPLES | SPECIFICITY | 95% CONFIDENCE INTERVAL |
|---|---|---|---|
| 1 | 794 | 98.9%(785/794) | 97.9-99.4% |
| 2 | 731 | 97.8%(715/731) | 96.5-98.6% |
| 3 | 100 | 100% (100/100) | 96.3-100% |
| Combined Sites | 1625 | 98.5% (1600/1625) | 97.7-99.0% |

*Note: 80 samples from 4 patients with positive galactomannan antigen results coinciding with piperacillin / tazobactam therapy were excluded.

SPECIFICITY BY ADULT PATIENTS

Note: Reproducibility Studies were previously presented in prior 510(k) submission (k023857) for this assay, no new reproducibility studies have been performed.

Specificity testing was previously conducted using the Platelia™ *Aspergillus* EIA at three sites on a combined total of 143 Bone Marrow Transplant (BMT) and Leukemia adult patients without signs of Invasive Aspergillosis (control patients).

Table 7

| SITE | NUMBER OF PATIENTS | SPECIFICITY | 95% CONFIDENCE INTERVAL |
|---|---|---|---|
| 1 | 28 | 78.6% (22/28) | 60.5-89.8% |
| 2 | 77 | 93.4% (71/77) | 84.0-96.4% |
| 3 | 38 | 89.5% (34/38) | 75.9-95.8% |
| Combined Sites | 143 | 88.8% (127/143) | 82.6-93.0% |

SPECIFICITY BY ADULT SAMPLES

Note: Reproducibility Studies were previously presented in prior 510(k) submission (k023857) for this assay, no new reproducibility studies have been performed.

Specificity testing was previously conducted using the Platelia™ *Aspergillus* EIA at three sites on a combined total of 1262 samples obtained from 143 Bone Marrow Transplant (BMT) and Leukemia adult patients without signs of Invasive Aspergillosis (control patients).

Table 8

| SITE | NUMBER OF SAMPLES | SPECIFICITY | 95% CONFIDENCE INTERVAL |
|---|---|---|---|
| 1 | 349 | 98.0% (342/349) | 95.9-99.0% |
| 2 | 560 | 98.6% (552/560) | 97.2-99.3% |
| 3 | 353 | 98.9% (349/353) | 97.1-99.6% |
| Combined Sites | 1262 | 98.5% (1243/1262) | 97.7-99.0% |

**PREDICTIVE VALUE**

Positive and negative predictive values have been analyzed for the two patient populations. Based on the actual average of 13.6% prevalence rate in pediatrics and 16.9% prevalence rate in adults observed in this study, positive and negative predictive values have been calculated as below:

A. PEDIATRICS

Study Prevalence 13.6%

PPV: 39.1% 95% Confidence Interval : 22.2-59.2%
NPV: 92.2% 95% Confidence Interval : 85.3-96.0%

B. ADULTS

Study Prevalence 16.9%

PPV: 59.0% 95% Confidence Interval: 43.4-72.9%
NPV: 95.5% 95% Confidence Interval: 90.5-97.9%

The expected prevalence of Invasive Aspergillosis varies with the patient population; rates from 5-20% have been reported [4,7]. For patient populations on the lower end of the published prevalence, the positive and negative prevalence have been re-calculated using a 5% prevalence rate.

A. PEDIATRICS

Calculated Prevalence 5%

PPV : 17.6% 95% Confidence Interval : 6.5-39.8%
NPV : 97.2% 95% Confidence Interval : 92.1-99.1%

B. ADULTS

Calculated Prevalence 5%

| | |
|---|---|
| PPV: 27.2% | 95% Confidence interval: 13.7-46.7% |
| NPV: 98.8% | 95% Confidence Interval: 95.4-99.7% |

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
2098 Gaither Road
Rockville MD 20850

JUN 2 2006

Ms. Priya Bondre
Regulatory Affairs Representative
Bio-Rad Laboratories
Diagnostics Group
6565 185th Avenue, NE
Redmond, WA 98052

Re: k060641
Trade/Device Name: Platelia™ *Aspergillus* EIA
Regulation Number: 21 CFR 866.3040
Regulation Name: Aspergillus Spp. Serological Reagents
Regulatory Class: Class I
Product Code: NOM
Dated: February 28, 2006
Received: March 10, 2006

Dear Ms. Bondre:

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 (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. 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.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to such additional controls. Existing major regulations affecting your device can be found in Title 21, Code of Federal Regulations (CFR), Parts 800 to 895. In addition, FDA may publish further announcements concerning your device in the Federal Register.

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 Parts 801 and 809); and good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820).

This letter will allow you to begin marketing your device as described in your Section 510(k) premarket notification. The FDA finding of substantial equivalence of your device to a legally marketed predicate device results in a classification for your device and thus, permits your device to proceed to the market.

If you desire specific information about the application of labeling requirements to your device, or questions on the promotion and advertising of your device, please contact the Office of *In Vitro* Diagnostic Device Evaluation and Safety at (240)276-0484. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21CFR Part 807.97). You may obtain other general information on your responsibilities under the Act from the Division of Small Manufacturers, International and Consumer Assistance at its toll-free number (800) 638-2041 or (301) 443-6597 or at its Internet address http://www.fda.gov/cdrh/industry/support/index.html

Sincerely yours,

Sally A. Hojvat, M.Sc., Ph.D.
Director
Division of Microbiology Devices
Office of *In Vitro* Diagnostic Device
Evaluation and Safety
Center for Devices and
Radiological Health

Enclosure

## Indications for Use

**510(k) Number (if known):** Not known at this time

**Device Name:** Platelia™ *Aspergillus* EIA

**Indications For Use:**

The Platelia™ *Aspergillus* EIA is an immunoenzymatic sandwich microplate assay for the detection of *Aspergillus* galactomannan antigen in adult and pediatric serum samples.

The Platelia™ *Aspergillus* EIA is a test which, when used in conjunction with other diagnostic procedures such as microbiological culture, histological examination of biopsy samples and radiographic evidence, can be used as an aid in the diagnosis of invasive aspergillosis.

Prescription Use X AND/OR Over-The-Counter Use _____
(Part 21 CFR 801 Subpart D) (21 CFR 801 Subpart C)

(PLEASE DO NOT WRITE BELOW THIS LINE-CONTINUE ON ANOTHER PAGE IF NEEDED)

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Concurrence of CDRH, Office of Device Evaluation (ODE)

Division Sign-Off

Office of In Vitro Diagnostic Device
Evaluation and Safety

510(k) K060641