CA 125 II ASSAY
CA 125 II (06/18/02)

510(k) SUMMARY OF SAFETY AND EFFECTIVENESS
CA125 II Assay for Bayer ADVIA® Integrated Modular System (IMS)™

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

The assigned 510(k) number is: K023329

1. Intended Use

This *in vitro* immunoassay is intended to quantitatively measure OC 125 reactive determinants associated with a high molecular weight glycoprotein in serum of women with primary epithelial invasive ovarian cancer using ADVIA IMS CA125 II Assay on a *Bayer ADVIA®* IMS™. CA 125 II Assay is indicated as an aid in the management (monitoring) of ovarian cancer patients when used in conjunction with other diagnostics procedures. The CA125 II Assay is also indicated as a one-time test for use as an aid in the detection of residual ovarian carcinoma in patients who have undergone first-line therapy and would be considered diagnostic second-look procedures. This assay is not intended for screening or diagnosis of ovarian cancer or for use on any other system.

2. Predicate Device

Product Name	Reagent Part #	Calibrator Part #
Immuno 1 CA125 II Assay	T01-3560-51	T03-3562-01

3. Device / Method

Product Name	Reagent Part # / BAN Number	Calibrator Part # / BAN Number
ADVIA IMS CA 125 II Assay	B42-3893-21 / 03692807	B43-3925-01 / 06578142

4. Performance

Imprecision

ADVIA IMS	
Level (U/mL)	Total CV(%)
26.8	3.0
74.1	1.9
169.8	2.5

Immuno 1	
Level (U/mL)	Total CV(%)
30.2	2.4
80.6	2.5
200.2	2.6

Linearity

Linearity was evaluated by diluting a high CA 125 II serum sample with a serum pool containing low CA 125 II level. Recovery was acceptable ranging from 96.7% to 106.2%, meeting specifications and in concordance with the Immuno 1 (predicate).

Parallelism

Parallelism was evaluated by diluting a serum sample with a high CA125 II level, with Immuno 1 Sample Diluent B. Recovery was acceptable ranging from 95.6% to 109.7% in concordance with the Immuno 1 (predicate)

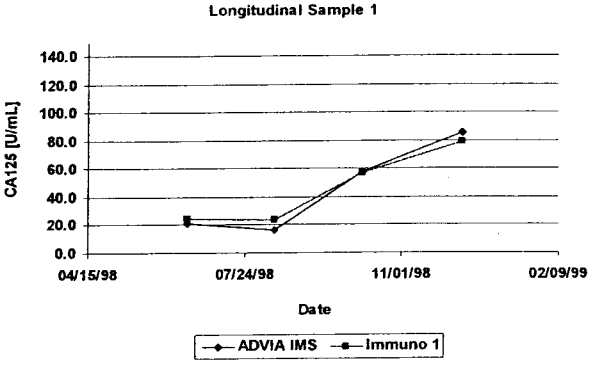
Bayer Corporation
511 Benedict Avenue
Tarrytown, NY 10591-5097 USA

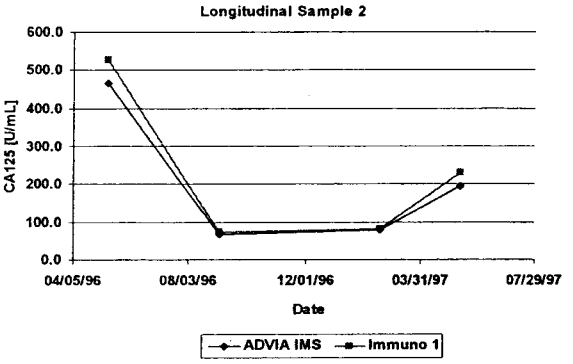
Correlation (Y= ADVIA IMS, X=comparison system)

Specimen type	Comparison System (X)	N	Regression Equation	Syx (U/mL)	R	Sample Range (U/mL)
Serum	Immuno 1	45	1.047 * X – 3.94	13.74	0.994	5.1-509.2

Longitudinal Samples Evaluation

Two examples of serial patient monitoring studies using Bayer ADVIA IMS assay results in comparison to results obtained for another marketed device are shown in the following figures.





Correspondence of ADVIA IMS CA125II Assay levels with the clinical course of disease was evaluated using guidelines by Bast et al, whereby a doubling of CA125 II values reflect disease progression and a 50% decrease in CA125 II values reflects response to therapy.

Clinical Status	Change	NoChange	Total
Change	18	7	25
NoChange	1	2	3
Total	19	9	28
	Estimate	95% CI	
Sensitivity	94.7%	74.0%	to 99.9%
Specificity	22.2%	2.8%	to 60.0%
Positive predictive value	72.0%		
Negative predictive value	66.7%		
Concordance	71.4%		

Interfering Substances

Separate low serum pools were spiked with the following materials: triglycerides (1000 mg/dL), hemoglobin (1000 mg/dL), bilirubin (25 mg/dL), albumin (6.5 g/dL), immunoglobulin (6.0 g/dL), over the counter medications, vitamins, caffeine and drug pools (two times lethal dose). In all cases the observed recovery bias was found to be of no clinical significance.

Bayer Corporation
511 Benedict Avenue
Tarrytown, NY 10591-5097 USA

CA 125 II ASSAY
CA 125 II (06/18/02)

Interfering Substance	Interfering Substance Concentration mg/dL	CA125 Concentration (U/mL)	Effect (% change)
Hemoglobin	1000	19.9	-2.3
Lipids (Triglycerides)	1000	18.5	0.9
Bilirubin	25	22.5	-2.6
IgG	6000	25.1	-4.0
Albumin	6500	22.2	4.3
Acetaminophen	200 µg/mL	30.9	-0.5
Aspirin	500 µg/mL	23.8	-2.2
Ibuprofen	400 µg/mL	23.8	-0.8
Caffeine	100 µg/mL	24.5	1.2
Vitamin A	10 U/mL	21.6	0.1
Vitamin B_1	3 µg/mL	23.4	-1.2
Vitamin B_2	3.4 µg/mL	21.6	-1.3
Vitamin B_6	4 µg/mL	20.6	-0.4
Vitamin B_{12}	12 ng/mL	21.6	9.5
Vitamin C	30 µg/mL	24.5	1.4
Vitamin D_2	0.8 U/mL	20.6	3.7
Vitamin E	0.06 U/mL	20.6	2.5
Folic Acid	0.8 µg/mL	21.6	7.0
Niacin	40 µg/mL	21.6	4.4
Vincristine Sulfate	13.5	20.6	4.1
Vinblastine	5.11	20.6	4.1
Mitomycin C	73	21.6	0.9
Tamoxifen - Free	60	20.6	4.1
Tamoxifen - Citrate	60	20.6	4.1
Etoposide	415	22.5	4.1
5-Fluorouracil	1600	21.6	3.5
Cyclophosphamide Monohydrate	800	21.6	0.9
Doxorubicin HCl	51.8	21.6	0.9
Diethylstibestrol	23	20.6	4.1
Methotrexate	450	22.5	5.6
Cis-Platinum	173	20.6	4.1
Lupron	15	25.9	-5.8
Megestrol Acetate	243	21.6	0.9

Analytical Range
0.5 – 550 U/mL

Minimum Detectable Concentration

ADVIA IMS (U/mL)	Immuno 1 (U/mL)
0.5	0.9

Bayer Corporation
511 Benedict Avenue
Tarrytown, NY 10591-5097 USA

4. Conclusion

Performance of the ADVIA IMS CA125 II Assay on a *Bayer ADVIA*® IMS™ is equivalent to the performance of the CA125 II Assay on the predicate device (Immuno 1) and is within proposed specifications. No safety and effectiveness issues have been raised.

K. Edds
Director Regulatory Affairs
Bayer Corporation
511 Benedict Avenue
Tarrytown, New York 10591-5097

Date

DEPARTMENT OF HEALTH & HUMAN SERVICES

Food and Drug Administration
2098 Gaither Road
Rockville MD 20850

Kenneth T. Edds, Ph.D.
Regulatory Affairs Manager
Bayer Diagnostics
511 Benedict Avenue
Tarrytown, NY 10591

NOV 2 7 2002

Re: k022329
Trade/Device Name: CA 125 II Assay for the ADVIA® IMS™
Regulation Number: 21 CFR 866.6010
Regulation Name: Tumor-associated antigen immunological test system
Regulatory Class: Class II
Product Code: LTK
Dated: October 25, 2002
Received: October 29, 2002

Dear Dr. Edds:

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 (301) 594-3084. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21CFR Part 807.97). Other general information on your responsibilities under the Act may be obtained 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/dsma/dsmamain.html.

Sincerely yours,

Steven Gutman

Steven I. Gutman, M.D., M.B.A.
Director
Office of *In Vitro* Diagnostic Device
Evaluation and Safety
Center for Devices and
Radiological Health

Enclosure

510(k) Number: K022329

Device Name: CA125 II Assay for the ADVIA® IMS™

Indications for Use:

The *Bayer ADVIA® IMS™* CA 125 II Assay is an *in vitro* diagnostic device intended to quantitatively measure OC 125 reactive determinants associated with a high molecular weight glycoprotein in serum of women with primary epithelial invasive ovarian cancer. The CA 125 II Assay is indicated as an aid in the management (monitoring) of ovarian cancer patients when used in conjunction with other diagnostic procedures. The CA 125 II Assay is also indicated as a one-time test for use as an aid in the detection of residual ovarian carcinoma in patients who have undergone first-line therapy and would be considered for diagnostic second-look procedures. An assay value of greater than 35 U/mL is predictive of residual disease, provided that alternate causes of elevated CA 125 II Assay values can be excluded. It is recommended that the assessment and treatment of patients with ovarian cancer and the use of this CA 125 II Assay be under the order of a physician trained and experienced in the management of gynecologic cancers. This assay is not intended for screening or diagnosis of ovarian cancer or for use on any other system.

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

Concurrence of CDRH, Office of Device Evaluation (ODE)

J P Reeves for J. Bautista

(Division Sign-Off)
Division of Clinical Laboratory Devices

510(k) Number K022329

Prescription Use ✓ OR Over-The-CounterUse _____
(Per 21 CFR 801.109)

(Optional Format 1-2-96)