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Tumor

AFIAS PSA

INTENDED USE

AFIAS PSA is a fluorescence Immunoassay (FIA) for the quantitative determination of Prostate Specific Antigen (PSA) in human whole blood/serum /plasma. It is useful as an aid in management and screening of prostate cancer or other prostate disorders.

For *in vitro* diagnostic use only.

INTRODUCTION

Prostate specific antigen (PSA), a neutral serine protease with chymotrypsin-like activity, is composed of a single polypeptide chain of 237 amino acids. It is an intracellular glycoprotein containing 7-8 % carbohydrate as a single N-linked oligosaccharide side chain and has a molecular weight of approximately 34,000 Da.

PSA is exclusively synthesized by the prostate epithelium and mainly released into the semen. Normally very small amounts of PSA are secreted and detected in male blood. The elevated levels of PSA in male blood are known to be associated with some prostatic disorders such as prostatitis, benign prostatic hyperplasia (BPH) or prostate cancer.

PRINCIPLE

The test uses a sandwich immunodetection method; the detector antibody in buffer binds to antigen in sample, forming antigen-antibody complexes, and migrates onto nitrocellulose matrix to be captured by the other immobilized-antibody on test strip.

The more antigen in sample forms the more antigen-antibody complex and leads to stronger intensity of fluorescence signal on detector antibody, which is processed by the instrument for AFIAS tests to show PSA concentration in sample.

COMPONENTS

AFIAS PSA consists of 'Cartridge', 'Pipette Tip', 'ID chip' and 'Instruction for use'.

- Each cartridge packaged in an aluminum pouch has two components, a detector part and cartridge part.
- Cartridge part contains a test strip, the membrane which has anti human PSA at the test line, while streptavidin at the control line.
- Detector part contains anti human PSA-fluorescence conjugate, biotin-BSA-fluorescence conjugate, bovine serum albumin (BSA) as a stabilizer and sodium azide in phosphate buffered saline (PBS) as a preservative.

WARNINGS AND PRECAUTIONS

- For in vitro diagnostic use only.
- Carefully follow the instructions and procedures described in this 'Instruction for use'.
- Use only fresh samples and avoid direct sunlight.
- Lot numbers of all the test components (cartridge and ID chip) must match each other.
- Do not interchange the test components between different lots or use the test components after the expiration date, either of which might yield misleading of test result(s).
- The cartridge should remain sealed in its aluminum pouch until use. Do not use the cartridge if that is damaged or already opened.
- For shipping, samples must be packed in accordance with the regulations. Sample with severe hemolytic and hyperlipidemia cannot be used and should be recollected.
- Just before use, allow the cartridge and sample to be at room temperature for approximately 30 minutes.
- **AFIAS PSA** as well as the instrument for AFIAS tests should be used away from vibration and/or magnetic field. During normal usage, it can be noted that the instrument for AFIAS tests may produce minor vibration.
- Used pipette tips, and cartridges should be handled carefully and disposed by an appropriate method in accordance with relevant local regulations.
- An exposure to larger quantities of sodium azide may cause certain health issues like convulsions, low blood pressure and heart rate, loss of consciousness, lung injury and respiratory failure.
- **AFIAS PSA** will provide accurate and reliable results subject to the following conditions.
  - Use **AFIAS PSA** should be used only in conjunction with the instrument for AFIAS tests.
  - Any anticoagulants other than **EDTA** should be avoided.

LIMITATIONS OF THE TEST SYSTEM

- The test may yield false positive result(s) due to the cross-reactions and/or non-specific adhesion of certain sample components to the capture/detector antibodies.
- The test may yield false negative result. The non-responsiveness of the antigen to the antibodies is most common where the epitope is masked by some unknown components, so as not to be detected or captured by the antibodies. The instability or degradation of the antigen with time and/or temperature may cause the false negative as it makes antigen unrecognizable by the antibodies.
- Other factors may interfere with the test and cause erroneous results, such as technical/procedural errors, degradation of the test components/reagents or presence of interfering substances in the test samples.
- Any clinical diagnosis based on the test result must be supported by a comprehensive judgment of the concerned physician including clinical symptoms and other relevant test results.

STORAGE AND STABILITY

- The cartridge is stable for 20 months (while sealed in an aluminum pouch) if stored at 2-8 °C.

MATERIALS SUPPLIED

REF SMFP-9

Components of **AFIAS PSA**

- Cartridge Box Contains
  - Cartridge 24
  - Pipette Tip (Zipper bag) 24
  - ID Chip 1
  - Instruction For Use 1

MATERIALS REQUIRED BUT SUPPLIED ON DEMAND

Following items can be purchased separately from **AFIAS PSA**.
Please contact our sales division for more information.

- **AFIAS-1** REF FPRR019
- **AFIAS-6** REF FPRR020
- **Boditech Tumor marker Control** REF CFPO-94
- **Boditech Tumor marker Calibrator** REF CFPO-106

SAMPLE COLLECTION AND PROCESSING

The sample type for **AFIAS PSA** is human whole blood/serum/plasma.

- It is recommended to test the sample within 24 hours after collection.
- The serum or plasma should be separated from the clot by centrifugation within 3 hours after the collection of whole blood. If longer storage is required, e.g. if the test could not be performed within 24 hours, serum or plasma should be immediately frozen below -20 °C. The freezing storage of sample up to 3 months does not affect the quality of results.
- However, the whole blood sample should not be kept in a freezer in any case.
- Once the sample was frozen, it should be thawed one time and only for test, because repeated freezing and thawing can result in the changed test values.

TEST SETUP

- Check the components of the **AFIAS PSA** as described below. : Cartridge, pipette tip, ID chip and instruction for use
- Keep the sealed cartridge (if stored in refrigerator) at room temperature for at least 30 minutes just prior to the test. Place the cartridge on a clean, dust-free and flat surface.
- Turn on the instrument for AFIAS tests.
- Empty the tip box.
- Insert the ID chip into the "ID chip port".
- Please refer to the instrument for AFIAS tests 'Operation Manual' for complete information and operating instructions.

TEST PROCEDURE

1) Take 100 µL of sample with a pipette and dispense it into the sample well on the cartridge.
2) Insert the cartridge into the cartridge holder
3) Insert a tip into the tip hole of the cartridge.
4) Tap the 'START' icon on the screen.
5) The test result will be displayed on the screen after 15 minutes.

※ Note: Refer to the instrument for AFIAS tests Operation Manual to select sample type.

INTERPRETATION OF TEST RESULT

- The instrument for AFIAS tests calculates the test result automatically and displays PSA concentration of the test sample in terms of ng/mL.
- The cut-off (reference value): 4.00 ng/mL. If the test result is above 4.00 ng/mL, please contact your physician immediately for the further detailed investigation. The test result below 4.00 ng/mL does not completely exclude the possibility of a prostate disorder.
- The working range of the **AFIAS PSA** is 0.5-100 ng/mL.

QUALITY CONTROL

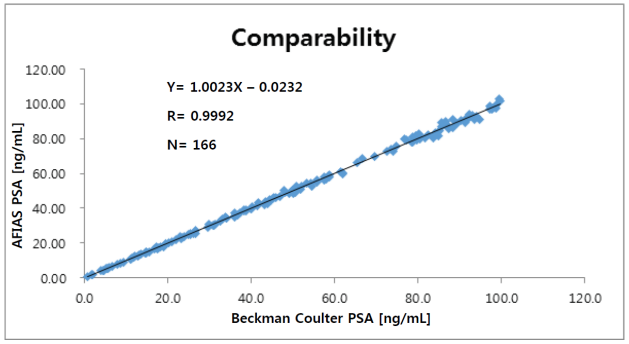
- Quality control tests are a part of the good testing practice to confirm the expected results and validity of the assay and should be performed at regular intervals.
- The control tests should be performed immediately after opening a new test lot to ensure the test performance is not altered.
- Quality control tests should also be performed whenever there is any question concerning the validity of the test results.
- Control materials are not provided with **AFIAS PSA**. For more information regarding obtaining the control materials, contact Boditech Med Inc.'s Sales Division for assistance.
  (Please refer to the instruction for use of control material.)
- **AFIAS PSA** is traceable to 'Hybritech calibration system' - the first gold standard for PSA testing approved by US FDA.

PERFORMANCE CHARACTERISTICS

- **Specificity**
  There was no significant interference with Bilirubin, Triglyceride, Hemoglobin, Glucose, Heparin and Total protein. Also there was no significant cross-reactivity with CA125, CA19-9, CA15-3, AFP and CEA.
- **Precision**
  For testing intra-assay precision, one person tested three different lots of **AFIAS PSA**, ten times at each concentration of the control standard. For testing inter-assay precision under the same conditions, three persons tested three different lots of **AFIAS PSA**; five times at each concentration of the control standard.

PSA Con. (ng/mL)	Intra-assay			Inter-assay		
	Avg.	SD	CV (%)	Avg.	SD	CV (%)
4	3.95	0.03	0.79	3.95	0.02	0.61
15	14.79	0.10	0.67	15.01	0.12	0.81
50	49.85	1.28	2.57	50.20	0.33	0.66

- **Comparability**
  PSA concentrations of 166 clinical samples were quantified independently with **AFIAS PSA** and Access2 (Beckman Coulter Inc. U.S.A.) as per prescribed test procedures. Test results were compared and their comparability was investigated with linear regression and coefficient of correlation (R). Linear regression and coefficient of correlation between the two tests were Y=1.0023X – 0.0232 and R = 0.9992 respectively.



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3. Frankel S, Smith GD, Donovan J, Neal D. Screening for prostate cancer. Lancet 2003; 361:1122-1128.
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Note: Please refer to the table below to identify various symbols.

Σ	Sufficient for <n> tests
	Read instruction for use
	Use by Date
LOT	Batch code
REF	Catalog number
	Caution
	Manufacturer
EC REP	Authorized representative of the European Community
IVD	In vitro diagnostic medical device
	Temperature limit
	Do not reuse
CE 0123	This product fulfills the requirements of the Directive 98/79/EC on in vitro diagnostic medical devices

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