FEB - 9 2005

K050063

510 (k) Summary

Asymmetrx, Inc.
117 Senate Brook Drive
Amston, CT 06231
(860) 716-8888

Contact Person: Maria McKeon

Date Summary Prepared: February 4, 2005

Name of Device:

1. Proprietary/Trade Name: Prostate-63 Cancer Diagnostic Test
2. Common Name: antibody to p63 protein in basal cells
3. Classification Name: Immunohistochemical reagent, antibody (monoclonal or polyclonal) to p63 protein in nucleus of prostatic basal cells

DESCRIPTION OF DEVICE:

Intended Use

For In Vitro Diagnostic Use. The Prostate-63 Cancer Diagnostic Test features a mouse monoclonal antibody, clone 4A4, that recognizes the human p63 protein in the nucleus of prostatic basal cells and urothelial tissues. This test is intended for laboratory use to qualitatively identify by immunohistochemistry the p63 antigen in histological sections from formalin-fixed paraffin-embedded tissue of normal and/or pathological prostate tissue obtained by needle biopsy or surgical procedures. The presence or absence of p63 staining aids the pathologist in the differential diagnosis of prostate cancer in conjunction with morphological findings seen with hematoxylin and eosin staining complemented by proper controls. The clinical interpretation of any staining or its absence should be evaluated within the context of the patient's clinical history and other diagnostic tests by a qualified pathologist.

Background

p63 is a member of the p53 family, which also includes p73 (Yang et al., 1998; Yang and McKeon, 2000). p63 is strongly expressed in the basal or progenitor cells of a large number of epithelial tissues (Yang et al., 1998). These tissues include squamous, transitional, and glandular epithelia, such as prostate, breast, esophagus, bladder, airway, and epidermis, among others. In general, these p63 positive basal cells act as the progenitors or reserve cells in these regenerative epithelia (Parsa et al., 1999). p63-deficient mice lack all epithelial tissues in which p63 is highly expressed, such as prostate, breast and epidermis. p63 mutant mice also show severe defects in limb and craniofacial development (Yang et al., 1999). A similar pattern is observed in patients with EEC syndrome, an autosomal dominant disorder characterized by ectodactyly, ectodermal dysplasia, and facial clefts, where affected patients are found to have dominant heterozygous p63 mutations (Celli et al., 1999). Recent studies support the utility of the 4A4 anti-p63 monoclonal antibody in the differential diagnosis of prostate

cancer. (Signoretti et al., 2000; Weinstein et al., 2002; Shah et al., 2002; Davis et al., 2002; Shah et al., 2004).

Reagent provided.

The 4A4 anti-p63 monoclonal antibody is provided at a working dilution in a buffer containing 50 mM Tris-HCl, pH 7.2, and 15 mM sodium azide.

Immunogen.

p63 recombinant protein comprising amino acids 1-205 of the N-terminal portion of human ΔNp63 protein (Yang et al., 1998).

Precautions:

1. For professional users only.
2. This product contains sodium azide (NaN_3), a chemical highly toxic in pure form. At product concentrations, though not classified as hazardous, sodium azide may react with lead and copper plumbing to form highly explosive build-ups of metal azides. Upon disposal, flush with large volumes of water to prevent metal azide build-up in plumbing.
3. As with any product derived from biological sources, proper handling procedures should be used.

The specifics of Specimen Preparation, Staining Procedure and Storage Requirements are detailed in the label.

Performance Characteristics.

The Prostate-63 Cancer Diagnostic Test was developed as a tool to facilitate the diagnosis of prostate cancer. Recent studies have supported the utility of the 4A4 anti-p63 monoclonal antibody in prostate cancer diagnosis (Signoretti et al., 2000; Weinstein et al., 2002; Shah et al., 2002; Davis et al., 2002; Shah et al., 2004). The basis of the Prostate-63 Cancer Diagnostic Test is the use of the 4A4 anti-p63 monoclonal antibody that recognizes all known p63 protein isoforms. Basal cells of the prostate show dark staining with the p63 antibody whereas secretory and neuroendocrine cells of the prostate typically show no staining (Yang et al., 1998; Signoretti et al., 2000). The dark nuclear staining pattern of the p63 antibody in basal cells may offer advantages over traditional basal cell markers which yield a diffuse cytoplasmic stain (Shah et al., 2002).

The 4A4 anti-p63 monoclonal antibody recognizes all forms of p63 protein on western blots, and shows strong nuclear staining of baby hamster kidney (BHK) cells expressing p63 cDNAs but not BHK cells expressing control vectors (Yang et al., 1998). By immunohistochemistry in mouse tissues, the 4A4 anti-p63 monoclonal antibody recognizes basal cells of skin, breast, prostate, urothelia, among other tissues, but does not show significant staining in corresponding tissues of embryos lacking the p63 gene (Yang et al., 1999)

p63 stains prostatic basal cells of normal glands in needle biopsies with a sensitivity approaching 100% (Wu et al., 2004). Benign glands were also positive in 11 of 12 (95%) sections derived from transurethral resection of the prostate (TURP; Shah et al., 2002). p63 does not stain neuroendocrine or luminal, secretory cells of the prostate (Signoretti et al., 2000). As basal cells are absent from invasive prostate carcinoma (Hedrick and

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Shah RB, Zhou M, LeBlanc M, Snyder M, Rubin MA. Comparison of the basal cell-specific markers, 34betaE12 and p63, in the diagnosis of prostate cancer. Am J Surg Pathol. 2002 Sep;26(9):1161-8.

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DEPARTMENT OF HEALTH & HUMAN SERVICES

Food and Drug Administration
2098 Gaither Road
Rockville MD 20850

Ms. Maria F. McKeon
President
AsymmetRx, Inc.
117 Senate Brook Drive
Amston, Connecticut 06231

FEB - 9 2005

Re: k050063
Trade/Device Name: Prostate-63 Cancer Diagnostic Test
Regulation Number: 21 CFR § 864.1860
Regulation Name: Immunohistochemistry
Regulatory Class: I
Product Code: NTR
Dated: December 28, 2004
Received: January 12, 2005

Dear Ms. McKeon:

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,

Robert L. Becker, Jr., MD, Ph.D
Director
Division of Immunology and Hematology
Office of *In Vitro* Diagnostic Device
Evaluation and Safety
Center for Devices and
Radiological Health

Enclosure

Indications for Use

510(k) Number (if known): K050063

Device Name: Prostate-63 Prostate Cancer Diagnostic Test

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Dated this 4th day of February, 2005

Maria F. McKeon, President
AsymmetRx, Inc.

Prescription Use ✓ AND/OR Over-The-Counter Use _____
(Part 21 CFR 801 Subpart D) (21 CFR 807 Subpart C)

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

Concurrence of CDRH, Office of In Vitro Diagnostic Devices (OIVD)

(Division Sign-Off)
Division of Clinical Laboratory Devices

510(k) Number K050063