

Diagnostic and Therapeutic Use of SPANX-N Genes in Cancer and Fertility

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Technology description

Market:

600,000 deaths from cancer related diseases estimated in 2006.

The technology platform involving novel antibodies for the diagnosis and therapeutics of several cancers has a potential market of more than 7 billion US dollars.

The technology platform has additional market in fertility related diagnostics and therapeutics.

Cancer is the second leading cause of death in United States and it is estimated that there will be approximately 600,000 deaths caused by cancer in 2006. In spite of the success of cancer screening and early diagnosis cancer still remains a life threatening disease. There is a great need for the development of new markers and new therapeutic strategies that would more accurately predict the outcome of the disease and aid in the proper management of cancer. Antibody-based strategies have taken a lead among the new cancer therapeutic approaches.

This technology describes the identification of the link between expression of individual members of the SPANX-gene cluster and malignancies including prostate cancer. SPANX-genes consist of two subfamilies, SPANX-A/D and SPANX-N1/N5. The invention provides SPANX polypeptides, nucleic acids and antibodies that could be useful for detecting and treating prostate or other cancers. The SPANX-N genes are a family of related genes that are expressed in normal testis and in tumor cells in humans including melanoma, bladder carcinomas and myelomas. The SPANX cancer/testis antigens thus represent good candidates for diagnosis or treatment of several cancers. The present invention also describes a new approach for mutation screen of the SPANX gene cluster, including gene amplification, linking predisposition to prostate cancer with a specific architecture of the SPANX gene cluster.

Additionally, due to the differential localization of SPANX-proteins in the spermatozoa, the mutational screen can be also used for diagnostics of infertility. Developed antibodies against SPANX-A/D and SPANX-N1/N5 proteins can be used for i) diagnostics of cancer, ii) diagnostics of infertility and iii) for the development of new contraceptives.

Application area

Novel antibodies to SPANX-A/D and SPANX-N1/N5

New approach for mutation screen of SPANX gene cluster

Antibodies can be used for diagnosis and development of immunotherapeutics for several cancers including prostate

Compounds can also be used for the diagnosis of infertility and development of new contraceptives.

Institution

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