

Unique Research Tool: Phospho-Specific Sp1 Antibodies

Business Opportunity

Sp1, the first identified and cloned transcription factor, regulates gene expression via multiple mechanisms and has been the subject of intense study for almost 3 decades. Virtually all known genes are controlled by Sp1. The activity of Sp1 itself is regulated by phosphorylation, however, up until now, progress has been hamstrung by the lack of phospho-specific Sp1 antibodies.

Researchers at UNSW have developed novel phospho-specific antibodies targeting Sp1 (pSp1Thr681 and pSp1Thr668/Ser670). These antibodies are now available for license as research reagents and/or diagnostic reagents.

This is a unique resource, as phospho-specific Sp1 antibodies are not commercially available.

The Market

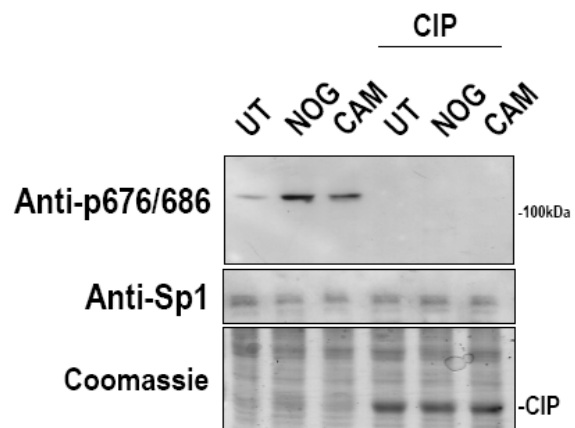
The antibody market (monoclonal, polyclonal and conjugated antibodies) reported revenues of US\$373.5 million in 2003, and is expected to reach US\$676.6 million by 2009, with a compound annual growth rate (CAGR) of 10.4%.

Pathologic states in which Sp1 is phosphorylated are diverse and include: tumorigenesis, leukaemias, viral infection (including HIV), scleroderma and restenosis. Sp1 is phosphorylated when cells undergo apoptosis, or are exposed to growth factors, cytokines and mechanical stresses, and drugs. UNSW's novel phospho-Sp1 antibodies will be of great interest to researchers working in the areas of signal transduction, protein modification, transcription, gene expression, immunohistochemistry, and the pathological basis of disease.

The Technology

Phospho-specific Sp1 antibodies are extremely valuable discovery tools and have been validated at UNSW for use in Western blotting, electrophoretic mobility shift analysis (EMSA), chromatin immunoprecipitation analysis (ChIP), enzyme-linked immunosorbent assay (ELISA), flow cytometry (FC) and immunohistochemistry (IHC).

Phospho-Sp1 has been detected using these antibodies in a diverse array of tissues, including epithelium in human fibroadenoma, lymphocytes in human acute lymphocytic leukemia, smooth muscle cells in human atherosclerotic plaques and in acutely injured animal arteries. NSI has patent protection for this product and applications.



Western blot detection of phosphorylated Sp1 using phospho-specific Sp1 antibodies (pThr, p676/686). Vascular smooth muscle cells were treated with nogalamycin (NOG, 10 mM) or camptothecin (CAM, 1 mg/mL). UT denotes untreated cells. Western blot with anti-Sp1 antibody showing abundance of Sp1 is unchanged. Pre-treatment of cell extracts with calf intestinal phosphatase (CIP), which hydrolyses 5' phosphates abolishes antibody detection.

The Team

Prof Levon Khachigian and his team at the Centre for Vascular Research at UNSW have an exceptional track record in research and commercialisation, with over 130 publications and numerous patents.

Investment Opportunity

The opportunity exists for a commercial partner to license the technology to rapidly develop and market the product as a unique research tool.

Further Information:

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