News

Tes, a potential Mena-related cancer therapy target

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Cancer remains one of the world's most prominent causes of human morbidity and mortality, particularly in developing countries. According to 2005 statistics from the WHO, approximately 7.6 million people died of cancer out of 58 million deaths worldwide, with 9 million people estimated to die from cancer in 2015 and 11.4 million to die in 2030 (*http://www.who.int/mediacentre/factsheets/fs297/en/index.html*).

The principal and internationally recognized methods of cancer treatment are surgery, radiotherapy, chemotherapy, or multimodality therapy. With the recent development of cancer biology, more and more tumor-related targets have been identified, ushering in a new era for target therapy.

Every possible step that causes cellular cancer, such as signal transduction pathways, oncogenes and anti-oncogenes, cytokines and receptors, anti-angiogenesis, suicide genes, and telomerase (*Shay JW, Keith WN. Br J Cancer 2008*), that is biologically relevant, reproducibly measurable, and definably correlated with clinical benefit represents a target for target therapies like targeting gene-virotherapy and monoclonal antibody-directed therapy. These therapies can specifically inhibit the growth of tumor cells at the molecular level and even kill them.

Generally speaking, cancer-related targets should be crucial to the tumor's malignant phenotype, easily measurable in readily obtained clinical samples, and yield a significant clinical response. Since tumorigenesis is a very complex process involving the interaction of multiple factors and pathways, target treatment offers hopes to maximize efficacy while minimizing toxicity and specificity. More importantly, treatment should have little or no toxicity on normal cells, thus representing the most promising aspect of cancer research (*Friday BB, Adjei AA. Clin Cancer Res 2008; 14:342-346*).

A recent cancer study has provided exciting information. According to *Xinhua News* from London, Michael Way and fellow researchers from Cancer Research UK, have found a specific tumor-related protein, "Tes," that can prevent the diffusion of cancer cells through a Mena-dependent mechanism (*http://news.xinhuanet.com/newscenter/2007-12/29/content_7337328.htm, available as of December 28, 2007*).

Research has found that a large amount of "Mena" protein is expressed in tumor tissues, helping cancer cells to diffuse throughout the body. Nevertheless, the protein "Tes" adheres to Mena, preventing it from reacting with another specific substance and rendering it ineffective, thus stopping Mena from helping cancer cells to diffuse somewhere else. However, there are large amounts of Mena in a tumor, so Tes is usually unable to stop the diffusion of cancer cells.

In light of other research, Way explained that new study results will open the door to new directions in cancer therapy research. Way also noted that if drugs containing large amounts of the protein Tes are developed in the future, they could stop Mena's action in the body, and thus prevent the massive diffusion of cancer cells.

Results of the study by Way and colleagues have been published in a recent issue of the journal Molecular Cell (*Boëda B, Briggs DC, Higgins T, et al. Mol Cell 2007; 28:1071-1082*).

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