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Strengthening the tumor-fighting ability of T cells

March 24 2008

Researchers may have found a new way to promote immune cell attack on tumors. The new study, by a team of scientists in Milan, Italy, will be published online on March 24 in the *Journal of Experimental Medicine*.

When faced with cancer, the immune system dispatches cells, called T cells, to kill the tumor. But these killer cells often fail to completely eliminate the tumor because they're deactivated by a distinct population of T cells known as regulatory T cells.

Past attempts to get rid of these regulatory T cells have largely failed, in part because they share many features with the killer T cells, making it difficult to eliminate one population without also eliminating the other.

In the new study, the researchers focused on a cell-surface protein called OX40 that had previously been shown (in culture dishes) to turn off the regulatory T cells, but turn on the killer T cells. When this protein was activated in mice, the new study shows, the animals eliminated existing tumors and were protected against developing new ones.

The potential drawback of this approach is that selective inhibition of regulatory T cells could provoke naturally self-reactive T cells to attack the body's own tissues (autoimmunity). The mice in the study, however, showed no signs of autoimmune disease, suggesting that OX40 may be a promising target for anti-cancer therapy.

Source: Journal of Experimental Medicine