

2. NON-TECHNICAL ABSTRACT

In order to fully activate the T-cells two signals must be given to them. One signal comes from these tumor proteins, called antigens. The other signal comes from a special activating protein, called a co-stimulatory molecule. One theory for why tumors are not destroyed by T-cells is that the tumor cell only has the first signal, but does not have the second signal. The most widely studied of the second signals is a protein called B7.1 and the gene for this protein has been inserted into a virus called fowlpox, which is closely related to vaccinia virus used for smallpox prevention, but does not cause disease in humans. A new fowlpox vaccine that contains three such molecules (B7.1, ICAM-1, and LFA-3) was made and appears much stronger in activating T-cells in the test tube. A vaccinia virus vaccine containing B7.1 and a vaccinia virus containing B7.1, ICAM-1, and LFA-3, has been tested in patients. The fowlpox virus does not divide in humans, does not cause disease, and is not eliminated by antibodies, all problems for vaccinia virus. This proposed study will use this new fowlpox virus with B7.1 and one with B7.1, ICAM-1, and LFA-3 to inject into tumors in patients with advanced disease. The goals of the study are to determine if this vaccine is safe, if the injected tumor will go away, and if the injection will stimulate the immune response and develop T-cells to find other tumors and attack them as well as the injected tumor.