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(54) Title: IMMUNE RESPONSES AGAINST HPV ANTIGENS ELICITED BY COMPOSITIONS COMPRISING AN HPV ANTIGEN AND A STRESS PROTEIN OR AN EXPRESSION VECTOR CAPABLE OF EXPRESSION OF THESE PROTEINS

(57) Abstract

The present invention relates to compositions for inducing an immune response, preferably a cellular, in particular a cell-mediated, cytolytic immune response, to human papillomavirus (HPV) protein antigens displayed by HPV or exhibited by infected cells including cells from cervical and other tumors. In one embodiment, compositions comprise an HPV protein antigen joined to a stress protein (or heat shock protein (Hsp)). The HPV protein antigen may be joined to the stress protein by chemical conjugation or noncovalently using linking moieties, or the HPV protein antigen and the stress protein may be joined in a fusion protein containing both HPV protein antigen and stress protein sequences. In another embodiment, compositions comprise an expression vector including, in expressible form, sequences encoding the HPV protein antigen and sequences encoding the stress protein. The expression vector can be introduced into cells of a subject, or it can be used to transduce cells of the subject *ex vivo*, resulting in the expression of an HPV protein antigen–stress protein fusion protein that will stimulate the subject's immune response to the HPV protein antigen. The present invention also relates to compositions comprising a stress protein linked to an HPV antigen and another pharmacologically acceptable component, to stress protein–HPV protein antigen fusions and conjugates and to expression vectors encoding and capable of directing the expression in a subject's cells of a fusion protein comprising a stress protein and an HPV protein antigen sequence. The present invention also relates to uses of these compositions to induce immune responses against HPV and HPV protein antigen–exhibiting cells including HPV–associated tumors.

