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(54) Title: METHODS AND DEVICES FOR MODULATING THE IMMUNE RESPONSE

(57) Abstract

The present invention provides methods and devices for inducing, stimulating, blocking and reducing the immune response of a mammal to an antigen, using an implantable device which exposes the antigen in a controlled fashion to cells of the immune system. The device comprises a porous matrix contained within a perforated, impermeable container. By manipulating the bioavailability of antigen within the device, and the timing of introduction of antigen into the device relative to the time of implantation of the device within the mammal, a robust and long-term response can be induced against an antigen, or an existing or potential immune response can be down regulated or blocked. The methods and devices can be used for therapeutic vaccination, and in non-exposed mammals for prophylactic vaccination. Immunity can be cellular, humoral, or mucosal. Suppression of the immune response is useful for the treatment or prophylaxis of such conditions as allergies, autoimmune disease, and in tolerizing mammals to suppress an immune response to transplant antigens. The device can also be used for harvesting immune cells for later reintroduction into the mammal, and for preparing immune serum and hybridomas.