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Title: Subcutaneous injection of monoclonal antibody anti-DEC205 conjugated with ovalbumin attenuates allergic lung inflammation of animals previously sensitized to allergen

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Body: DEC205 (Dendritic Endothelial Cell 205) is an endocytic receptor abundant on DCs in lymphoid tissues. Ovalbumin (OVA) protein can be chemically coupled to monoclonal a-DEC-205 antibody. Here, we sought to study the effect of a-DEC205 monoclonal antibody conjugated to OVA after OVA sensitization in a model of allergic lung disease. BALB/c mice were sensitized twice with OVA/Alum on days 0 and 7 and challenged twice with intranasal OVA on days 14 and 21 (OVA/alum group). The animals received a-DEC-205-OVA treatment after OVA sensitization (OVA/DEC group). The treatment consisted of two injections of a-DEC205 a week apart. We found that treatment with a-DEC205 decreased significantly allergic inflammation as revealed by total cell numbers and eosinophils counts in bronchoalveolar lavage (BAL) fluid.

In the group treated with a-DEC 205, but not with the isotype control, we observed a reduction of total and OVA-specific IgE antibodies as well as IL-4 and IL-5 levels in BAL. Furthermore, treatment with a-DEC 205 decreased the methacholine-induced respiratory pattern associated with allergy. Our results indicate that treatment with anti-DEC205 monoclonal antibody conjugated to OVA is effective in reducing allergic responses in animals previously sensitized to OVA. These results suggest a potential therapeutic use of a-DEC 205 in allergic disorders.