

Polymer-based Prophylactic and Therapeutic Cancer Vaccine Adjuvants

신우정, 임용택†

성균관대학교

(yongtaik@skku.edu†)

A polymer adjuvant containing immunostimulatory compounds was developed and evaluated as both therapeutic and prophylactic cancer vaccine adjuvant. With the help of hydrophilic polymer, water insoluble immunostimulatory compounds could be easily dispersed in aqueous solution which have an advantage in stability compared with those conventional liquid formulation that requires cold storage. This polymer vaccine adjuvant contributed to the increase of both humoral immunity and cellular immunity, which is very important for efficient cancer therapy. Through EG7-OVA tumor challenge experiments, we found out that the immune-stimulation effects of adjuvant was successful in the inhibition of tumor proliferation, and repeated vaccination steps were needed to induce enough therapeutic effect. When tumor cells were inoculated at 2 weeks after vaccination, the mice groups vaccinated with polymer vaccine adjuvant showed about 80% tumor free, while tumor was present in all mice of the PBS group. Furthermore, vaccinated group had survival rates of 90%, when survival was measured up to 45 days after tumor inoculation. Taken together, polymer-based vaccine adjuvants are expected to be used as potent prophylactic and therapeutic cancer vaccine.