

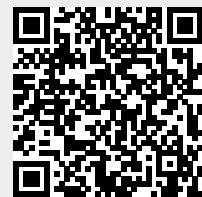
CKb11

The immunosuppressive tumor microenvironment (TME) of [cancer](#) strongly hinders the anti-tumor [immune responses](#), thereby resulting in disappointing responses to [immunotherapy](#). Chemoattractive and promotive traits of [chemokines](#) exerted on [leukocytes](#) have garnered interest in improving the efficiency of [immunotherapy](#) by increasing the infiltration of [immune cells](#) in the TME. In a study, a [folic acid](#) (FA)-modified gene delivery system based on the self-assembly of DOTAP, MPEG-PCL-MPEG, and FA-PEG-PCL-PEG-FA, namely F-PPPD, was developed to deliver [plasmids](#) encoding the immunostimulating chemokine [CKb11](#). The delivery of plasmid CKb11 (pCKb11) by F-PPPD nanoparticles resulted in the high secretion of CKb11 from tumor cells, which successfully activated T cells, suppressed the M2 polarization of macrophages, promoted the maturation of [dendritic cells](#) (DCs), facilitated the infiltration of [natural killer cells](#) and inhibited the infiltration of immunosuppressive cells in tumor tissues. Administration of F-PPPD/pCKb11 also significantly suppressed the cancer progression. The study demonstrated a [nanotechnology](#)-enabled delivery of pCKb11, that remodeled the immunosuppressive TME, for cancer treatment ¹⁾.

¹⁾

Nie W, Yu T, Liu X, Wang B, Li T, Wu Y, Zhou X, Ma L, Lin Y, Qian Z, Gao X. Non-viral vector mediated CKb11 with folic acid modification regulates macrophage polarization and DC maturation to elicit immune response against cancer. Bioact Mater. 2021 Apr 6;6(11):3678-3691. doi: 10.1016/j.bioactmat.2021.03.031. PMID: 33898872; PMCID: PMC8056185.

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