This week in therapeutics

Indication	Target/marker/pathway	Summary	Licensing status	Publication and contact information
Cancer				
Cancer	CXC chemokine receptor 2 (CXCR2; IL8RB); programmed cell death 1 (PDCD1; PD-1; CD279)	*In vitro* and mouse studies suggest CXCR2-targeted antibodies could improve the therapeutic efficacy of PD-1 antibodies in cancer. Immunosuppressive cells in the tumor microenvironment such as myeloid-derived suppressor cells can limit the efficacy of PD-1 antibodies against cancer. In a mouse model of rhabdomyosarcoma, numbers of Cxcr2-expressing, myeloid-derived suppressor cells increased as the tumors developed. In the animals, a CXCR2 antibody plus PD-1 antibody improved survival and caused more potent tumor growth inhibition than either antibody alone. Next steps include evaluating CXCR2 blockade with other cancer immunotherapies. Dompe Farmaceutici S.p.A. has the CXCR2 inhibitor reparixin in Phase III testing to treat graft rejection. At least four other companies have CXCR2 antagonists in Phase II or earlier testing to treat various pulmonary and inflammatory indications. Merck & Co. Inc. has the PD-1 antibody lambrolizumab under FDA review to treat melanoma. Ono Pharmaceutical Co. Ltd. and Bristol-Myers Squibb Co. have the PD-1 antibody nivolumab under review in Japan to treat melanoma and under FDA review for non–small cell lung cancer (NSCLC). At least five other companies have anti-PD-1 antibodies in Phase II or earlier testing to treat various cancers.	Findings unpatented; licensing status not applicable	Highfill, S.L. *et al. Sci. Transl. Med.*; published online May 21, 2014; doi:10.1126/scitranslmed.3007974 **Contact:** Crystal L. Mackall, National Institutes of Health, Bethesda, Md. e-mail: cm35c@nih.gov **Contact:** Steven L. Highfill, same affiliation as above e-mail: steven.highfill@nih.gov

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