This week in therapeutics

Indication	Target/marker/ pathway	Summary	Licensing status	Publication and contact information
Various				
Cancer; inflammation	Bromodomain containing 4 (BRD4)	An *in vitro* study suggests the epigenetic target BRD4 also has kinase activity, which could be inhibited to treat cancer or inflammation. In *in vitro* and cellular assays, BRD4 catalyzed phosphorylation of serine 2 (SER2) on RNA polymerase II, a site that needs to be phosphorylated for active transcription to occur. In cells, a BRD4 inhibitor lowered levels of SER2 phosphorylation on RNA polymerase II compared with no treatment. Next steps include screening for molecules that inhibit BRD4 kinase activity with high selectivity. Tensha Therapeutics Inc. has inhibitors of BET bromodomain, a class that includes BRD4, in preclinical development for cancer. Constellation Pharmaceuticals Inc. has BET bromodomain inhibitors in preclinical development for cancer and immunological indications. *SciBX* 5(19); doi:10.1038/scibx.2012.500 Published online May 10, 2012	Unpatented; licensing status not applicable	Devaiah, B.N. *et al. Proc. Natl. Acad. Sci. USA*; published online April 16, 2012; doi:10.1073/pnas.1120422109 **Contact:** Dinah Singer, National Institutes of Health, Bethesda, Md. e-mail: dinah.singer@nih.gov