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This week in therapeutics

Indication	Target/marker/pathway	Summary	Licensing status	Publication and contact information
Cancer				
Epithelial cancer	Bromodomain containing 4 (BRD4); Wolf-Hirschhorn syndrome candidate 1-like 1 (WHSC1L1; NSD3); NUT midline carcinoma 1 (NUTM1; NUT; C15orf55)	Studies in patient-derived cell cultures and *in vitro* suggest inhibiting NSD3 could be useful for treating NUT midline carcinoma (NMC). In a patient-derived NMC cell line, RNA sequencing, immunoblotting and siRNA knockdown identified a new NSD3-NUT fusion oncoprotein that prevented cellular differentiation and maintained proliferation. In the cell line, BRD4 inhibition with siRNA or a small molecule induced differentiation and prevented proliferation. In a distinct subset of NMC driven by the known BRD4-NUTM1 fusion protein, NSD3 was required for the formation of nuclear foci enriched with the BRD4-NUTM1 fusion. Next steps include evaluating the oncogenic role of NSD3 in more common forms of cancers and assessing the potential of NSD3 as a therapeutic target. *SciBX* 7(27); doi:10.1038/scibx.2014.792 **Published online July 17, 2014**	Patent application filed; available for licensing	French, C.A. *et al. Cancer Discov.*; published online May 29, 2014; doi:10.1158/2159-8290.CD-14-0014 **Contact:** Christopher A. French, Brigham and Women's Hospital and Harvard Medical School, Boston, Mass. e-mail: cfrench@partners.org