This week in therapeutics

Indication	Target/marker/pathway	Summary	Licensing status	Publication and contact information
Cancer				
Lymphoma	<i>MicroRNA-155</i> (<i>miRNA-155</i>); <i>miRNA-363*</i> ; <i>miRNA-206</i> ; <i>miRNA-494</i> ; <i>miRNA-155</i> ; <i>miRNA-184</i> ; <i>miRNA-542-3p</i> ; <i>miRNA-9*</i>	<p>Human miRNA profiling and <i>in vivo</i> mouse data suggest that inhibiting <i>miRNA-155</i> expression may be useful for treating Waldenstrom's macroglobulinemia (WM), a form of lymphoma. miRNA expression profiling identified a WM-specific signature characterized by upregulation of <i>miRNA-363*</i>, <i>miRNA-206</i>, <i>miRNA-494</i>, <i>miRNA-155</i>, <i>miRNA-184</i> and <i>miRNA-542-3p</i> and downregulation of <i>miRNA-9*</i>. In a human cell line, rituximab, perifosine or bortezomib altered the expression levels of the miRNAs except <i>miRNA-206</i>. In mice, an injection of WM cells transfected with an miRNA-155 knockdown probe produced a mean survival of 20 days compared with 14 days for mice that received cells transfected with a control probe ($p < 0.001$). Next steps include validating the miRNA signature as an independent prognostic marker for WM. Velcade bortezomib, a small molecule dipeptide boronic acid proteasome inhibitor from Takeda Pharmaceutical Co. Ltd.'s Millennium Pharmaceuticals Inc. subsidiary and Johnson & Johnson, is in Phase II testing to treat WM and is marketed for multiple myeloma (MM) and mantle cell lymphoma.</p> <p>Rituxan rituximab, a chimeric mAb against CD20 from Biogen Idec Inc., Genentech Inc. and Roche, is marketed to treat non-Hodgkin's lymphoma (NHL).</p> <p>Perifosine, an alkylphosphocholine modulator of protein kinase B (PKB; AKT; AKT1) and other signal transduction pathways from Aeterna Zentaris Inc. and Keryx Biopharmaceuticals Inc., is in Phase II testing to treat various cancers including lymphoma.</p> <p>SciBX 2(2); doi:10.1038/scibx.2009.48 Published online Jan. 15, 2009</p>	Patent and licensing status undisclosed	<p>Roccaro, A.M. <i>et al. Blood</i>; published online Dec. 12, 2008; doi:10.1182/blood-2008-09-178228</p> <p>Contact: Irene M. Ghobrial, Harvard Medical School, Boston, Mass. e-mail: irene_ghobrial@dfci.harvard.edu</p>