This week in techniques

Approach	Summary	Licensing status	Publication and contact information
Markers			
Ribosomal protein S6 kinase (RSK) phosphorylation to predict response to BRAF, MEK or phosphoinositide 3-kinase (PI3K) inhibitors	<p>Studies in patient samples, cell culture and mice suggest RSK phosphorylation status could predict response to BRAF, MEK or PI3K inhibitors. In a panel of cancer cell lines, reduction of RSK phosphorylation after treatment with a MEK or BRAF inhibitor was a stronger predictor of sensitivity to treatment than previously reported predictive markers, including <i>PTEN</i> (<i>MMAC1</i>; <i>TEP1</i>) loss or protein kinase B (PKB; PKBA; AKT; AKT1) phosphorylation. In a patient treated with both a MEK and BRAF inhibitor, RSK phosphorylation was eliminated prior to a complete response, and subsequent tumor recurrence was associated with restoration of RSK phosphorylation. In mouse xenograft models, tumors resistant to a phosphatidylinositol 3-kinase catalytic subunit α-polypeptide (PIK3CA; p110α) inhibitor had higher levels of RSK phosphorylation than sensitive tumors. In these models, adding an mammalian target of rapamycin (mTOR; FRAP; RAFT1) inhibitor decreased RSK phosphorylation and tumor growth compared with adding vehicle. Ongoing work includes clinical trials combining mTOR inhibitors with PI3K, RAF or MEK inhibitors.</p> <p>SciBX 6(34); doi:10.1038/scibx.2013.946 Published online Sept. 5, 2013</p>	Patent and licensing status unavailable	<p>Corcoran, R.B. <i>et al. Sci. Transl. Med.</i>; published online July 31, 2013; doi:10.1126/scitranslmed.3005753 Contact: Jeffrey A. Engelman, Massachusetts General Hospital Cancer Center, Boston, Mass. e-mail: jengelman@partners.org Contact: Daniel A. Haber, same affiliation as above e-mail: dhaber@partners.org</p> <p>Elkabets, M. <i>et al. Sci. Transl. Med.</i>; published online July 31, 2013; doi:10.1126/scitranslmed.3005747 Contact: José Baselga, Memorial Sloan-Kettering Cancer Center, New York, N.Y. e-mail: baselgaj@mskcc.org Contact: Maurizio Scaltriti, same affiliation as above e-mail: scaltrim@mskcc.org</p>