This week in therapeutics

Indication	Target/marker/ pathway	Summary	Licensing status	Publication and contact information
Inflammation				
Asthma	Toll-like receptor 7 (TLR7)	*In vitro* and mouse studies suggest that rapidly metabolized TLR7 agonists could help treat asthma without cytokine-induced side effects. *In vitro* testing of oxoadenine analogs identified a lead compound (SM-324405) as a low nanomolar TLR7 agonist with a half-life in human plasma of less than three minutes. In a rat model of asthma, SM-324405 reduced immune cell infiltration in the lungs compared with no treatment. In healthy rats, a control TLR7 agonist induced systemic cytokine production, whereas SM-324405 did not; these results were consistent with rapid conversion of SM-324405 to noncytokine-inducing metabolites in blood plasma. Ongoing work by partners Dainippon Sumitomo Pharma Co. Ltd. and AstraZeneca plc includes additional preclinical studies of SM-324405 and other oxoadenine analogs. Dainippon Sumitomo and AstraZeneca's TLR7 agonist AZD8848 is in Phase II testing to treat allergic asthma and in Phase I testing to treat allergic rhinitis. Anadys Pharmaceuticals Inc.'s ANA773, a prodrug of a TLR7 agonist, is in Phase I testing to treat HCV infection and cancer. Idera Pharmaceuticals Inc.'s IMO-3100, a dual TLR7 and TLR9 agonist, is in Phase I testing to treat autoimmune indications.	Patented by Dainippon Sumitomi Pharma and AstraZeneca	Kurimoto, A. *et al. J. Med. Chem.*; published online March 16, 2010; doi:10.1021/jm100070n **Contact:** Ayumu Kurimoto, Dainippon Sumitomo Pharma Co. Ltd., Osaka, Japan e-mail: ayumu-kurimoto@ds-pharma.co.jp

SciBX 3(12); doi:10.1038/scibx.2010.380
Published online March 25, 2010