

This week in therapeutics

Indication	Target/marker/ pathway	Summary	Licensing status	Publication and contact information
Infectious disease				
Sepsis	Bacterial lipid II	<p><i>In silico</i>, <i>in vitro</i> and mouse studies suggest a compound that mimics the antimicrobial peptide defensin α1 (DEFA1; HNP-1) could be used to treat sepsis. <i>In silico</i>, SAR and biological analyses identified low-molecular weight compounds that mimicked the structure of DEFA1 bound to lipid II, a bacterial cell wall precursor. In antibacterial assays, the lead compound killed Gram-positive bacterial isolates as well as <i>Escherichia coli</i> by inhibiting cell wall synthesis. In a mouse model of <i>Staphylococcus aureus</i>-induced sepsis, the lead compound prevented the deaths of four out of five mice, whereas vancomycin prevented the death of five out of five mice and vehicle did not prevent death. Next steps include SAR studies and optimization of the lead compound. Cellceutix Corp.'s brilacidin, a synthetic defensin mimetic, has completed Phase II trials to treat acute bacterial skin and skin structure infection (ABSSSI).</p> <p>SciBX 7(1); doi:10.1038/scibx.2014.23 Published online Jan. 9, 2014</p>	Patent application filed; available for licensing from the University of Maryland, Baltimore Office of Research and Development	<p>Varney, K.M. <i>et al. PLoS Pathog.</i>; published online Nov. 7, 2013; doi:10.1371/journal.ppat.1003732 Contact: Erik P.H. de Leeuw, University of Maryland School of Medicine, Baltimore, Md. e-mail: edeleeuw@som.umaryland.edu</p>