

This week in therapeutics

| Indication | Target/marker/ pathway | Summary | Licensing status | Publication and contact information |
|----------------------|--------------------------------|--|---|---|
| Renal disease | | | | |
| Renal disease | Phosphodiesterase-4 (PDE-4) | <p>Rat and <i>in silico</i> studies suggest blocking PDE-4 inhibition could help treat kidney disease by sustaining podocyte differentiation. In glomeruli isolated from a rat model of kidney disease, proteomics and <i>in silico</i> kinase and network analyses identified a reduction of signaling through cAMP responsive element binding protein 1 (Creb1; Creb) that regulated podocyte differentiation markers. In the rat model, blocking cAMP hydrolysis with a PDE-4 inhibitor decreased proteinuria compared with no treatment and restored normal podocyte morphology. Next steps include testing a series of PDE-4 inhibitors in the rat model and investigating how components of the cAMP network affect different disease stages. Kyorin Pharmaceutical Co. Ltd. markets the small molecule PDE-4 and PDE-10 inhibitor Ketas ibudilast to treat asthma. Takeda Pharmaceutical Co. Ltd., Forest Laboratories Inc., Merck & Co. Inc. and Mitsubishi Tanabe Pharma Corp. market Daliresp roflumilast for chronic obstructive pulmonary disease (COPD). At least four other companies have PDE-4 inhibitors in Phase III or earlier trials to treat respiratory disease.</p> <p>SciBX 7(11); doi:10.1038/scibx.2014.320 Published online March 20, 2014</p> | Unpatented; licensing status not applicable | <p>Azeloglu, E.U. <i>et al. Sci. Signal.</i>; published online Feb. 4, 2014; doi:10.1126/scisignal.2004621 Contact: Ravi Iyengar, Mount Sinai School of Medicine, New York, N.Y. e-mail: ravi.iyengar@mssm.edu Contact: John Cijiang He, same affiliation as above e-mail: cijiang.he@mssm.edu</p> |