

Abstract Submission No. : 9172

**APX-115 against diabetic kidney disease: from bench to phase
II clinical trial**

Hunjoo Ha

College of Pharmacy, Ewha Womans University, Korea

Drug discovery and development is like a marathon and requires passion, dedication, and perseverance. It demands collaboration of many resources. Many undoubtedly fail in the long journey of new drug development, but successful discovery of one new medicine will bring hope and relief to millions of patients around the world. In that sense, drug discovery is a social responsibility of scientists.

Over 30 years, I have been studying to understand the pathogenesis of diabetic kidney disease (DKD). DKD is the leading cause of end-stage kidney disease worldwide, and mainstay treatments of DKD includes glycemic control, blood pressure control, and blockade of renin-angiotensin-aldosterone system. Sodium-glucose cotransporter 2 (SGLT2) inhibitor has been recently added as a treatment option for DKD. Nevertheless, a better understanding on the pathogenesis of DKD remains important to develop novel therapeutic agents. Kidney fibrosis, characterized by the accumulation of disorganized and stiff extracellular matrix, is the common final feature leading to end-stage kidney disease regardless of the initial injury. Oxidative stress plays a key role in the development and progression of kidney fibrosis. NADPH oxidases along with redox imbalance in mitochondria and peroxisome significantly contribute to intra-renal reactive oxygen species generation under diabetic stress. While the downstream effectors of NADPH remains to be established, a considerable effort has been devoted to development of Nox inhibitors for the treatment of DKD. In this presentation, our ongoing studies on the development of APX-115, a pan Nox inhibitor as the first-in-class drug against DKD will be discussed.