

**Adenosine receptors: new targets for diabetic kidney disease**

Hunjoo Ha

Graduate School of Pharmaceutical Sciences, Ewha Womans University

Diabetic kidney disease (DKD) continues being the leading cause of end stage kidney disease worldwide, but the current pharmacological treatment for DKD is limited to renin–angiotensin system (RAS) inhibitors. Adenosine is detectable in the kidney and significantly elevated in response to cellular damage. Studies have demonstrated the pivotal role of equilibrative nucleoside transporters (ENT) in controlling adenosine availability and promoting DKD and the positive correlation between plasma adenosine and DKD. All 4 known subtypes of adenosine receptors such as A1AR, A2aAR, A2bAR, and A3AR are expressed in the kidney. While A2aAR and A2bAR have been suggested to regulate renal fibrosis, our previous study has demonstrated that a novel orally active and selective A3AR antagonist ameliorates unilateral ureteral obstruction–induced tubulointerstitial fibrosis. Our progress is now being made on development of the more effective A3AR antagonist for the treatment of DKD. In this seminar, I will present our ongoing studies on the development of A3AR antagonist as the first–in–class drug against DKD.