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Proteomic study on advanced glycation end-products treatment in kidney of mice

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Diabetic nephropathy is the most common cause of end-stage renal disease in the world. Advanced glycation end products (AGEs) are heterogeneous cross-linked sugar-derived proteins which could accumulate in glomerular basement membrane, mesangial cells, endothelial cells and podocytes in patients with diabetes and/or end-stage renal failure. AGEs are thought to be involved in the pathogenesis of diabetic nephropathy via multifactorial mechanisms such as oxidative stress generation and overproduction of various growth factors and cytokines. This study aims to analyze advanced glycation end-products (AGEs)-mediated protein network in mice kidneys. We used mass spectrometry to detect proteome in kidney from streptozotocin (STZ)-induced diabetic mice kidneys. Many of the proteins are functionally associated with kidney toxicity and specific mitochondrial dysfunction related proteins were identified in AGEs-treated mice kidney. Moreover, we found grade 1 metastatic necrosis of renal tubules without inflammation in AGEs-treated mice kidney. AGEs are likely to induce diabetic nephropathy by inducing chronic mitochondrial dysfunction in the mice kidney tubules.

Biography

Eun Hee Han has completed her PhD from Chosun University and Postdoctoral studies from Hormel Institute of Minnesota University in USA. She is a Senior Researcher of Korea Basic Science Institute in South Korea. She has published more than 60 papers in reputed journals.

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