

# 5<sup>th</sup> World Congress on **Biotechnology**

June 25-27, 2014 Valencia Conference Centre, Valencia, Spain

## **Kimchi increases Nrf2-Keap1 system against oxidative stress in the kidney of Dahl salt-sensitive rats**

Hyun Ju Kim

World Institute of Kimchi, South Korea

**K**imchi is a traditional fermented Korean food made of salted vegetables with a variety of seasonings. In spite of being listed on one of the World five healthiest foods, kimchi has been ranked as one of main food of sodium supplier in South Korea. This work was undertaken to evaluate the effects of kimchi on hypertension and renal damages, which are closely associated with oxidative stress. Four-week-old Dahl salt-sensitive (DS) rats were divided into four groups that consumed 0.3% NaCl group (0.3% DS), 2.57% NaCl group (2.57% DS) and kimchi containing 2.57% NaCl (kimchi DS), and Dahl salt-resistant rats were fed a 0.3% NaCl diet for 8 weeks. Hypertension, urinary protein excretion, plasma lipid levels, oxidant stress, renal injury, decrease in antioxidant enzymes increased in an age- and dose-dependent manner by NaCl intake in DS rats. Kimchi containing 2.57% NaCl attenuated salt-induced proteinuria, hypertension, glomerular sclerosis, inflammation, fibrosis, oxidative stress, and decreased antioxidant enzymes. This protective effect was associated with enhanced nuclear translocation of Nrf2 and its down-stream genes and decreased fibrosis. It is concluded that the protective effect of kimchi against salt-induced hypertension, renal dysfunction, and renal injury was associated with nuclear translocation of Nrf2 and the prevention of both oxidant stress and the decrease of antioxidant enzymes.

### **Biography**

Hyun Ju Kim has completed her PhD at the age of 29 years from Pusan National University and postdoctoral studies from University of California, Irvine. She is the senior research scientist of World Institute of Kimchi. She has published more than 30 papers in reputed journals and has been working on effect of foods in cardiovascular disease such as atherosclerosis, hypertension, kidney disease, etc.

[hjkim@wikim.re.kr](mailto:hjkim@wikim.re.kr)