Jihong Yao et al., J Clin Toxicol 2014, 4:4
http://dx.doi.org/10.4172/2161-0495.S1.013

OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Summit on
Toxicology & Applied Pharmacology
October 20-22, 2014 DoubleTree by Hilton Hotel Chicago-North Shore, USA

# Carnosic acid prevent ethanol induced hepatic injury via a sirt1-p66shc pathway

**Jihong Yao[2], Xinyao Tian[1], Yan Hu[2], Mingzhu Li[2] and Dongyan Gao[2]**
[1]Central South University, China
[2]Dalian Medical University, China

**Aim:** Carnosic acid (CA), an active phenolic compound isolated from *Rosmarinus officinalis*, has many biological and pharmaceutical activities. The study aimed to determine whether CA could protect acute ethanol-induced hepatic injury in rats and to clarify the molecular mechanisms of CA.

**Methods:** Ethanol, at dose of 6 g/kg, was intragastrically administered to the rats every 12 hours for 3 times to induce acute liver injury. Rats were intragastrically administrated with CA (30 mg/kg and 60 mg/kg) for three days before ethanol administration. L02 cells were exposed to EtOH to induce injury *in vitro*. The Liver function was tested by assessing alanine transaminase (ALT) and aspartate transaminase (AST) activities and histological examination. The expression of sirt1, p66shc, MnSOD and the relative factors in the downstream were measured by RT-PCR and western blot respectively *in vivo* and *in vitro*.

**Results:** After ethanol administration, the activities of serum ALT, AST and the levels of MDA were increased obviously and were consistent with hepatocellular damage. All of which were all reduced by pretreatment with CA. Meanwhile, CA protected against ethanol-induced liver injury via remarkable activation of sirt1 expression and down-regulation of p66shc adapter protein.

**Conclusion:** These results reveal a new protective mechanism elicited by CA-induced SIRT1 activation in liver tissues and suggest CA can alleviate ethanol-induced hepatitis via a sirt1-p66shc pathway.

yaojihong65@hotmail.com