prueba de alta de abstract

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±µ£³´ Naturally occurring, small non-coding RNA molecules; miRNAs are complementary to one or more mRNA molecules, and by downregulating gene expression regulate expression of many genes including cancer and cardiovascular diseases. Aldosterone, steroid hormone is produced in the cortex of the adrenal glands, has a crucial importance on the regulation of blood pressure and like many hormones its expression is also regulated by miRNAs. The aim of this study to clarify which miRNAs have been altered after treatment with aldosterone in rats. In order to investigate the relation between miRNAs and aldosterone regulation, aldosterone induced rat models were generated. Quantitative amount of aldosterone was measured by Aldosterone ELISA Kit. Systolic blood pressure of rat was measured by non-invasive “Tail-cuff” method. RNA samples from heart tissue were isolated using TRIZOL, quality and quantity of RNA samples were calculated using Bioanalyzer using Agilent RNA 6000 Nano Kit. Alteration in miRNA expression has been detected via customized miRNA array and selected aldosterone related gene expressions subsequently confirmed by qRT-PCR. Serum samples of rat were analyzed for aldosterone concentration and aldosterone concentration increased from 288.1 pg/mL to 623 pg/mL when compared with control group (p=0.0008). Blood pressure measurement studies showed that aldosterone induction causes formation of hypertension in rats (control group is 118±9 mmHg while ALDO group has blood pressure as 164±2 mmHg (p< 0.0001). miRNA array studies showed that 723 miRNAs have been elevated (2-fold,p< 0.05) and 29 of which showed 5-fold regulated and 14 of them altered 10-fold after treatment with 75 µg/kg aldosterone in heart tissues. These results indicate that elevation in miRNA expression may modulate aldosterone level and causes formation of hypertension. Y eso es asó rt