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Data Article

Expression of hepatic miRNAs targeting porcine glucocorticoid receptor (GR) 3′UTR in the neonatal piglets under a maternal gestational betaine supplementation

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ABSTRACT

Glucocorticoid receptor (GR) has been previously demonstrated an important transcriptional factor of hepatic metabolic genes in the neonates under a maternal gestational betaine supplementation ("Gestational dietary betaine supplementation suppresses hepatic expression of lipogenic genes in neonatal piglets through epigenetic and glucocorticoid receptor-dependent mechanisms" Cai et al., 2015 [1]). Here we provide accompanying data about the expression of hepatic miRNAs targeting porcine GR 3′UTR in the neonatal piglets. Liver samples were obtained and RNA was isolated. RNA was poly-adenylated by poly (A) polymerase and then dissolved and reverse transcribed using poly (T) adapter. The diluted cDNA were used in each real-time PCR assay. The sequences of all the porcine miRNAs were acquired from miRBase (http://www.mirbase.org/). miRNAs targeting GR were predicted using the PITA algorithm. Among all the predicted miRNAs, 4 miRNAs targeting GR were quantitated by real-time PCR and miRNA-124a, which has been identified to target GR 3′UTR [2,3], was more highly expressed in betaine-exposed neonatal livers.
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Specifications table

Subject area	Biology
More specific subject area	Animal nutrition and metabolism
Type of data	Figure of miRNAs predicted to target GR, Table of miRNAs expression
How data was acquired	Quantitative PCR analysis was performed using SYBR Premix Ex Taq™ PCR Master Mix in Mastercycler® ep realplex PCR detection system.
Data format	Filtered and analyzed
Experimental factors	Maternal gestational betaine supplementation
Experimental features	RNA isolation and polyadenylation; real-time PCR.
Data source location	Dafeng, Jiangsu, China
Data accessibility	Data are provided in the paper

Value of the data

- miRNAs participation in post-transcription of genes could be included in other studies of fetal programming.
- The data show new way to study porcine hepatic function of glucocorticoid receptor.
- The data may be useful as comparison with human health care studies of methyl donor supplementation in the mothers' diets.

1. Data, experimental design, materials and methods

1.1. Liver samples

Sows were divided randomly into control and betaine groups (8 per group) while sows were fed basal diet and received betaine-supplemented (3 g/kg) diet respectively throughout the pregnancy.

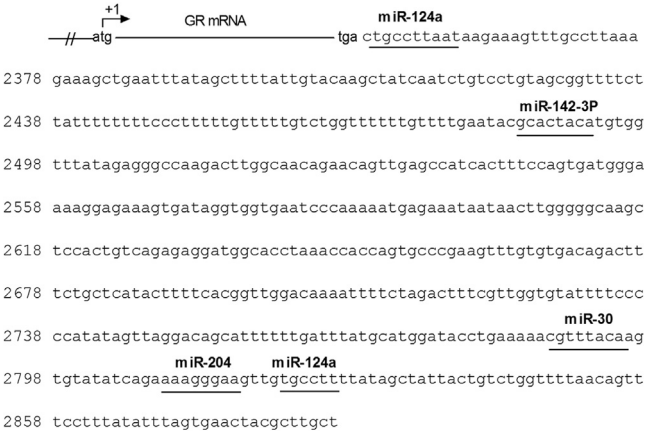

Fig. 1. The 3′UTR of GR gene (NR3C1) were acquired from NCBI database (NM_001008481.1). The sequences of all the porcine miRNAs were acquired from miRBase (⟨http://www.mirbase.org/⟩). miR-124a, miR-142-3p, miR-30 and miR-204, the miRNAs were predicted to target the 3′UTR of GR with an online miRNA prediction tool [4].

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