

## Corrigendum

# Betaine alleviates hepatic lipid accumulation via enhancing hepatic lipid export and fatty acid oxidation in rats fed with a high-fat diet - CORRIGENDUM

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### Abstract

In the abstract, these sentences (page 1, line 5) should be: 'Additionally, hepatic betaine–homocysteine methyltransferase **concentration** as well as its mRNA abundance and lecithin level were found increased ( $P < 0.05$ ) by betaine supplementation in both basal diet-fed rats and high-fat diet-fed rats. Betaine administration in high-fat diet-fed rats exhibited a higher ( $P < 0.05$ ) **concentration** of hepatic carnitine palmitoyltransferase 1 (CPT1) compared with high-fat diet-fed rats.'

### Materials and methods

#### *Hepatic histology and hepatic lipid metabolites analysis*

In this paragraph, the last sentence (page 2, line 15) should be: 'Hepatic carnitine, carnitine palmitoyltransferase 1 (CPT1) and betaine–homocysteine methyltransferase (BHMT) **concentration** were determined by using ELISA kits (A&D Company Limited, **China**) according to manufacturer's instructions.'

The catalogue numbers of the ELISA kits:

Rat CPT1 ELISA kit, code-CSB-E16442r;

Rat BHMT ELISA kit, code-CSB-EL002693RA.

### Results

#### *Betaine elevated the **concentration** and the mRNA expression of betaine–homocysteine methyltransferase in the liver*

In this paragraph, the first sentence (page 4, line 1) should be: 'Compared with groups without betaine administration (T1 and T3), betaine supplementation groups (T2 and T4) exhibited a significant increase ( $P < 0.05$ ) in the **concentration** of BHMT in the liver (Fig. 3(a)). High-fat diet also elevated ( $P < 0.05$ ) the **concentration** of BHMT when compared with rats fed with basal diet.'

#### *Betaine increased PPAR $\alpha$ gene expression and reversed the inhibition of carnitine palmitoyltransferase 1 gene expression induced by high-fat diet in the liver*

In this paragraph, the second sentence (page 4, line 3) should be: 'Betaine administration in rats fed with a high-fat diet

exhibited a higher **concentration** of CPT1 ( $P < 0.05$ ) compared with that of high-fat diet-fed rats (Fig. 4(a)).'

#### *Betaine increased the **concentration**, gene and protein expression of fibroblast growth factor 21, and elevated the gene expression of AMP-activated protein kinase in the liver*

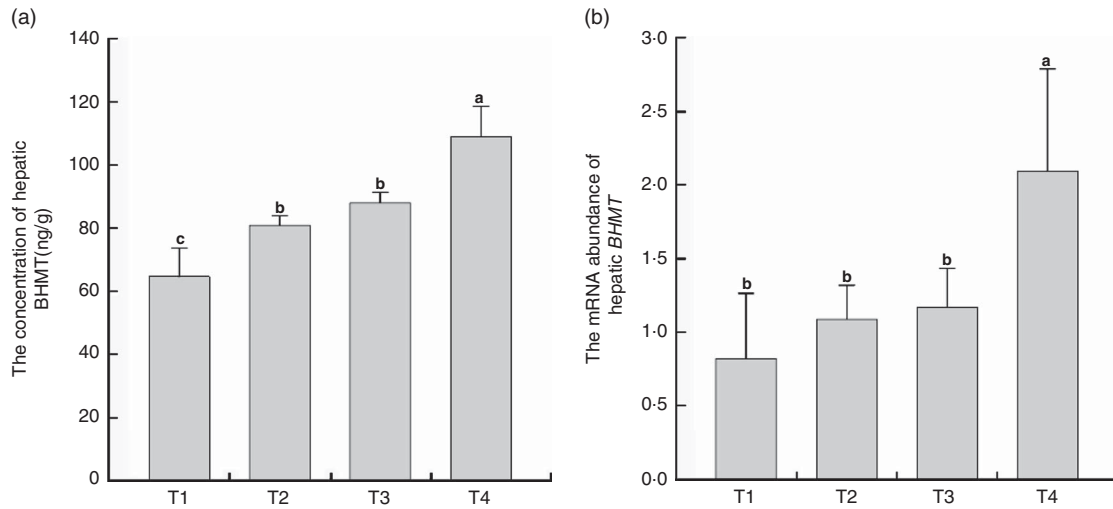
In this paragraph, the first sentence (page 5, line 1) should be: 'The changes of betaine administration on the **concentration**, gene and protein expression of FGF21 in the liver are shown in Fig. 5(a)–(c).'

### Discussion

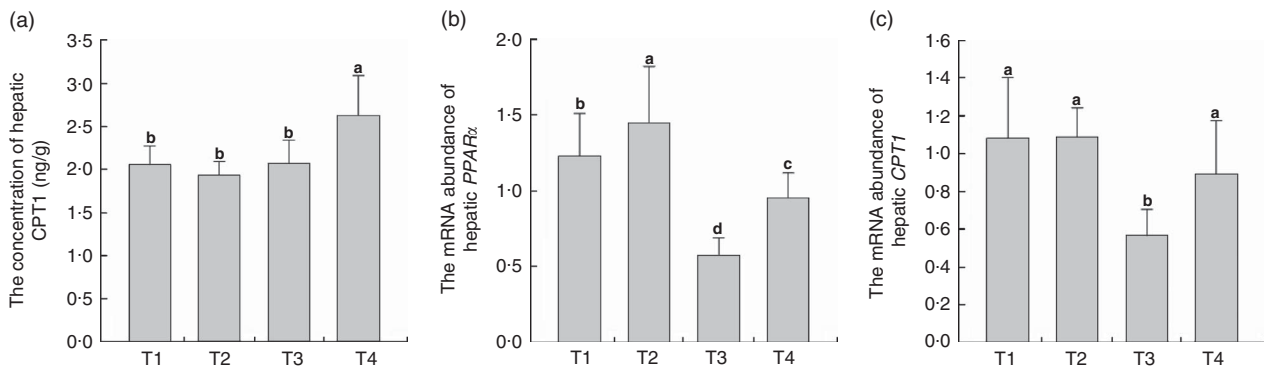
In this part, the second paragraph the third sentence (page 6, line 18) should be: 'Significant increase in BHMT **concentration** was observed in betaine administration rats given either basal diet or high-fat diet, which was accompanied with the notable increase of BHMT mRNA abundance in the high-fat group.'

In this part, the second paragraph the sentence (page 6, line 6) should be: 'Our results showed that betaine administration elevated the levels of hepatic lecithin and serum lecithin and VLDL in high-fat diet-fed rats, which suggested that betaine reversed hepatic lipid accumulation by elevated lecithin and VLDL levels via increasing the expression and **concentration** of BHMT, thus enhancing hepatic lipid export. Besides, high-fat diet also increased the **concentration** of BHMT in the liver.'

In this part, the third paragraph the third sentence (page 6, line 6) should be: '**The results** showed that betaine



**Fig. 3.** (a) Effect of betaine on the **concentration** of betaine–homocysteine methyltransferase (BHMT) in the liver. (b) Effect of betaine on the mRNA abundance of BHMT in the liver. Values are means (*n* 7), with standard deviations represented by vertical bars. <sup>a,b,c</sup>Mean values with unlike letters were significantly different (*P* < 0.05). Groups: T1, basal diet; T2, basal diet with betaine administration; T3, high-fat diet; T4, high-fat diet with betaine administration.



**Fig. 4.** (a) Effect of betaine on the **concentration** of carnitine palmitoyltransferase 1 (CPT1) in the liver. (b) Effect of betaine on the gene expression of PPARα in the liver. (c) Effect of betaine on the gene expression of CPT1 in the liver. Values are means (*n* 7), with standard deviations represented by vertical bars. <sup>a,b,c,d</sup>Mean values with unlike letters were significantly different (*P* < 0.05). Groups: T1, basal diet; T2, basal diet with betaine administration; T3, high-fat diet; T4, high-fat diet with betaine administration.

administration had no apparent effect on the **concentration** of CPT1 in rats fed with basal diet.’

The titles of the y axes in the Fig. 3(a) and Fig. 4(a) were incorrect. They should read: **The concentration** of hepatic BHMT (**ng/g**); **The concentration** of hepatic CPT1 (**ng/g**)

The authors sincerely apologise for this errors.

**Reference**

Xu L, Huang D, Hu Q, Wu J, Wang Y & Feng J (2015) Betaine alleviates hepatic lipid accumulation via enhancing hepatic lipid export and fatty acid oxidation in rats fed with a high-fat diet. *British Journal of Nutrition*, 1–9.