

Supplementary Materials for

Amelioration of nonalcoholic fatty liver disease by sodium butyrate is linked to the modulation of intestinal tight junctions in *db/db* mice

Food & Function

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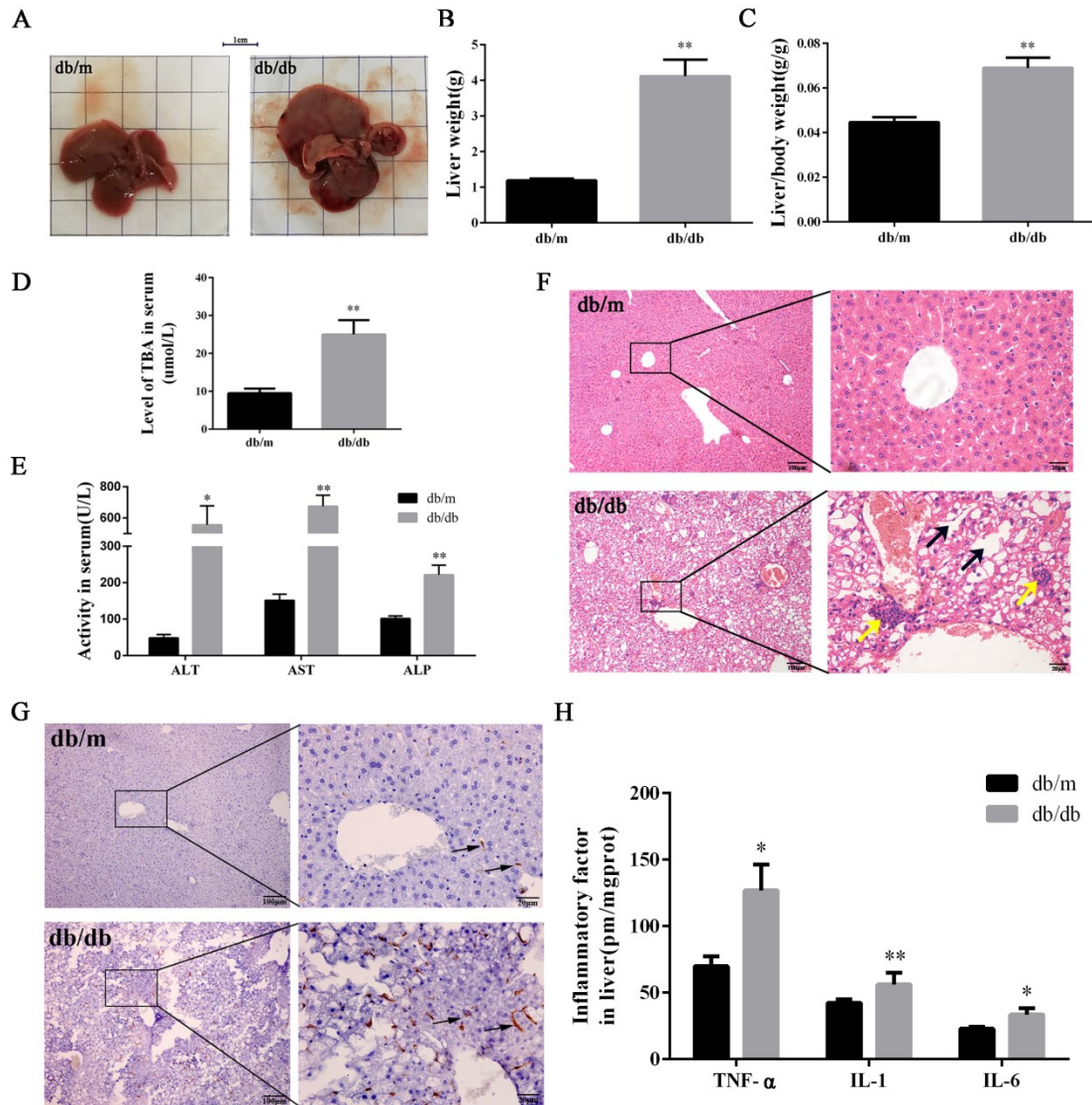
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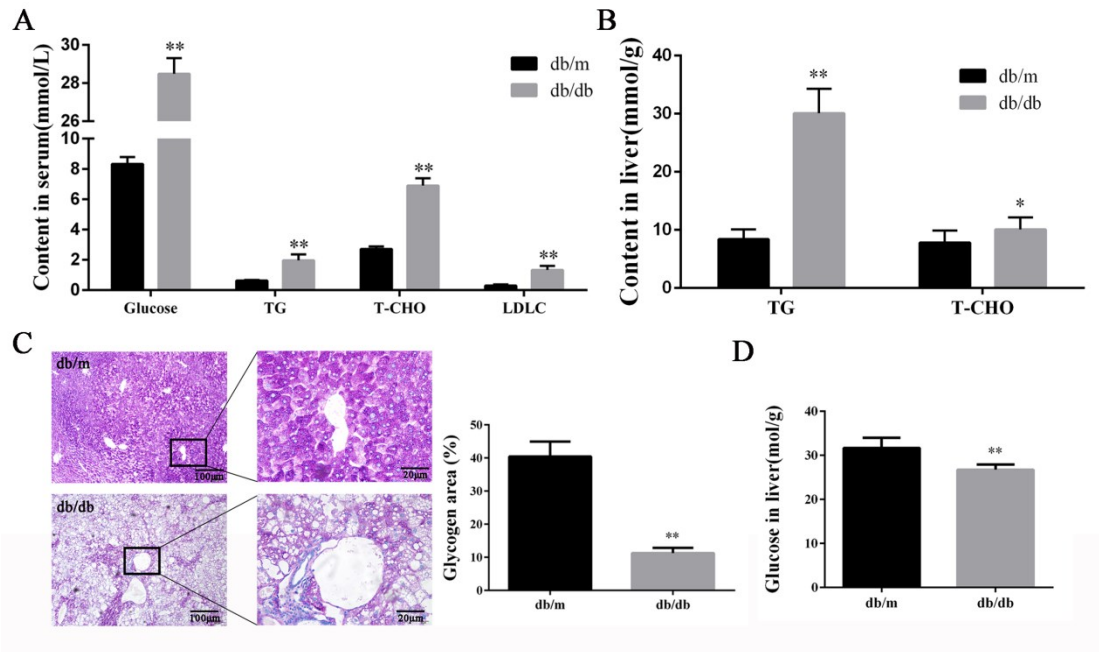
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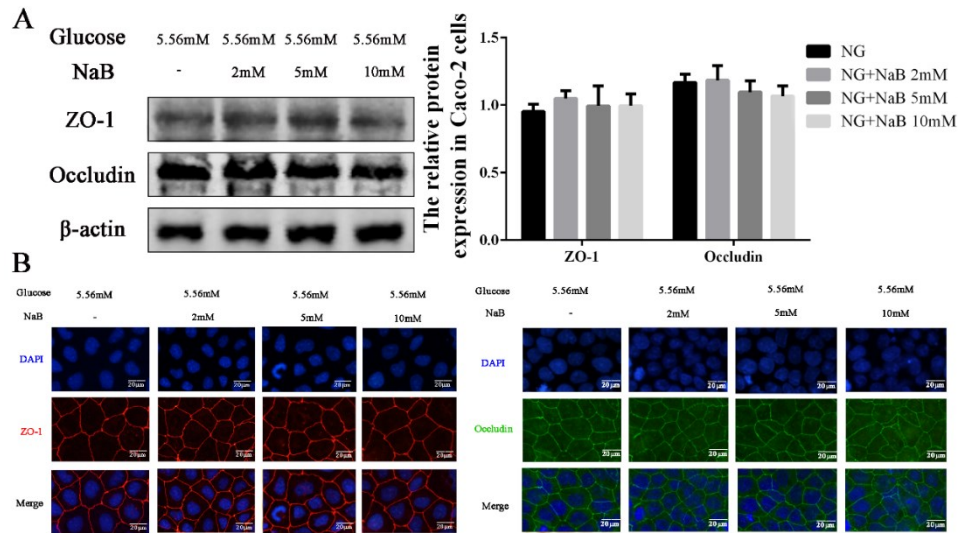
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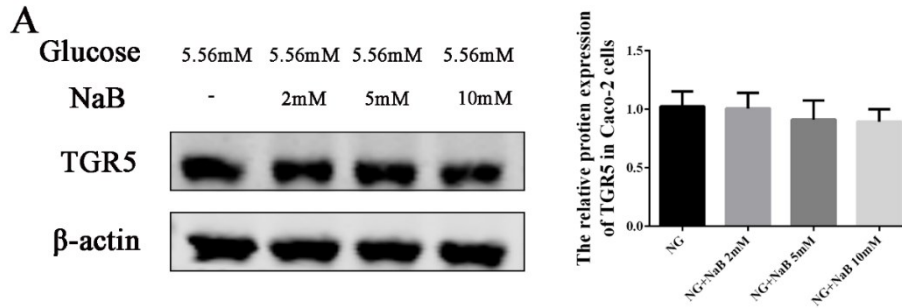
Supplemental Fig 1. Liver histology, liver injury, and liver proinflammatory cytokines of 16-week-old *db/db* mice. (A) Liver morphology. (B) Liver weight, and (C) liver index in different groups. (D) The levels of serum total bile acid in mice. (E) The levels of serum ALT, AST and ALP activity in mice. (F) Liver hematoxylin-eosin staining in mice. (G) The expression of F4/80 in liver through immunohistochemistry. (H) The levels of liver proinflammatory cytokines of mice. Each bar represents the mean \pm SEM for groups of six. * $p < 0.05$, ** $p < 0.01$, compared with *db/m* mice as indicated.



Supplemental Fig 2. Glucose and lipid metabolism of 16-week-old *db/db* mice. (A) The levels of serum glucose, LDLC, TG and T-CHO in mice. (B) The liver levels of TG and T-CHO in mice. (C) Liver glycogen staining. (D) The levels of glucose in mice liver. Each bar represents the mean \pm SEM for groups of six. * $p < 0.05$, ** $p < 0.01$, compared with *db/m* mice as indicated.



Supplemental Fig 3. Effects of sodium butyrate on tight junctions of normal Caco-2 cells in *vitro*. (A, B) The relative protein levels and distribution of ZO-1 and Occludin in Caco-2 cells. NG: cells treated with normal glucose 5.56 mmol/L; NG+NaB 2 mM: cells treated with NG+NaB 2 mM; NG+NaB 5 mM: cells treated with NG+NaB 5 mM; NG+NaB 10 mM: cells treated with NG+NaB 10 mM. Each bar represents the mean \pm SEM for groups of three. * $P < 0.05$, ** $P < 0.01$ compared to NG as indicated.



Supplemental Fig 4. Effects of sodium butyrate on TGR5 protein expression of normal Caco-2 cells in *vitro*. (A) The relative protein levels of TGR5 in Caco-2 cells. NG: cells treated with normal glucose 5.56 mmol/L; NG+NaB 2 mM: cells treated with NG+NaB 2 mM; NG+NaB 5 mM: cells treated with NG+NaB 5 mM; NG+NaB 10 mM: cells treated with NG+NaB 10 mM. Each bar represents the mean \pm SEM for groups of three. * P < 0.05, ** P < 0.01 compared to NG as indicated.