

# Supplementary Material: Dietary Catalase Supplementation Alleviates Deoxynivalenol-Induced Oxidative Stress and Gut Microbiota Dysbiosis in Broiler Chickens

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**Table S1.** Composition of the basal diet (air-dry basis)

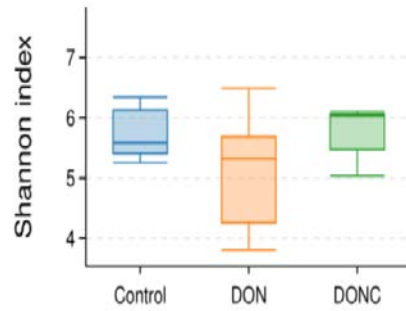
Ingredients	Content (%)
Corn	54.70
Soybean meal	38.10
Soybean oil	2.60
Limestone	1.20
Dicalcium phosphate	2.00
Sodium chloride	0.26
Lysine	0.01
DL-Methionine (98%)	0.13
Premix <sup>1</sup>	1.00
Total	100.00
Nutrient levels	
Metabolizable energy (MJ/kg)	12.55
Crude protein (%)	21.10
Calcium (%)	1.00
Available phosphorus (%)	0.46
Lysine (%)	1.2
Methionine (%)	0.5

<sup>1</sup>Supplied per kilogram of diet: vitamin A, 5,000 IU; thiamin, 2.5 mg; riboflavin, 15 mg; pyridoxine, 4 mg; vitamin D, 80.75 mg; tocopherol, 31 mg; menadione, 1.6 mg; pantothenic acid, 60 mg; niacin, 15 mg; biotin, 0.5 mg; folic acid, 1.5 mg; choline, 450 mg; Cu, 9.5 mg; Zn, 60 mg; Fe, 70 mg; Mn, 121 mg; Se, 0.45 mg; I, 1.4 mg.

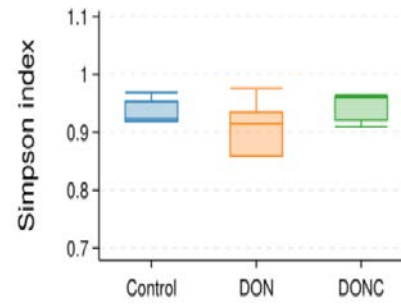
**Table S2.** The contents of some mycotoxins aside from deoxynivalenol and its acetylated precursors in feed

Items	Content
Zearalenone	0.13 mg/kg
Aflatoxin B1	Less than 0.2 µg/kg
Fumonisin	1.85 mg/kg

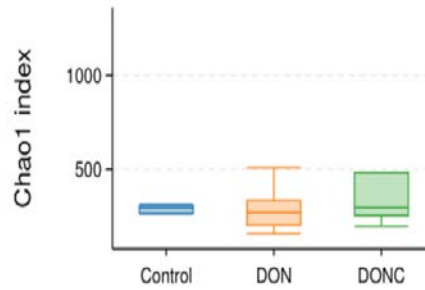
A. Shannon index



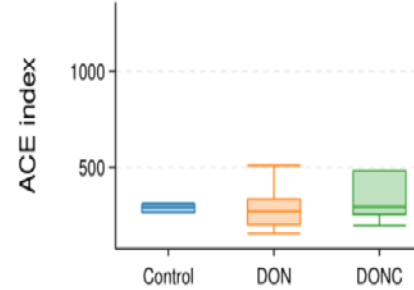
B. Simpson index



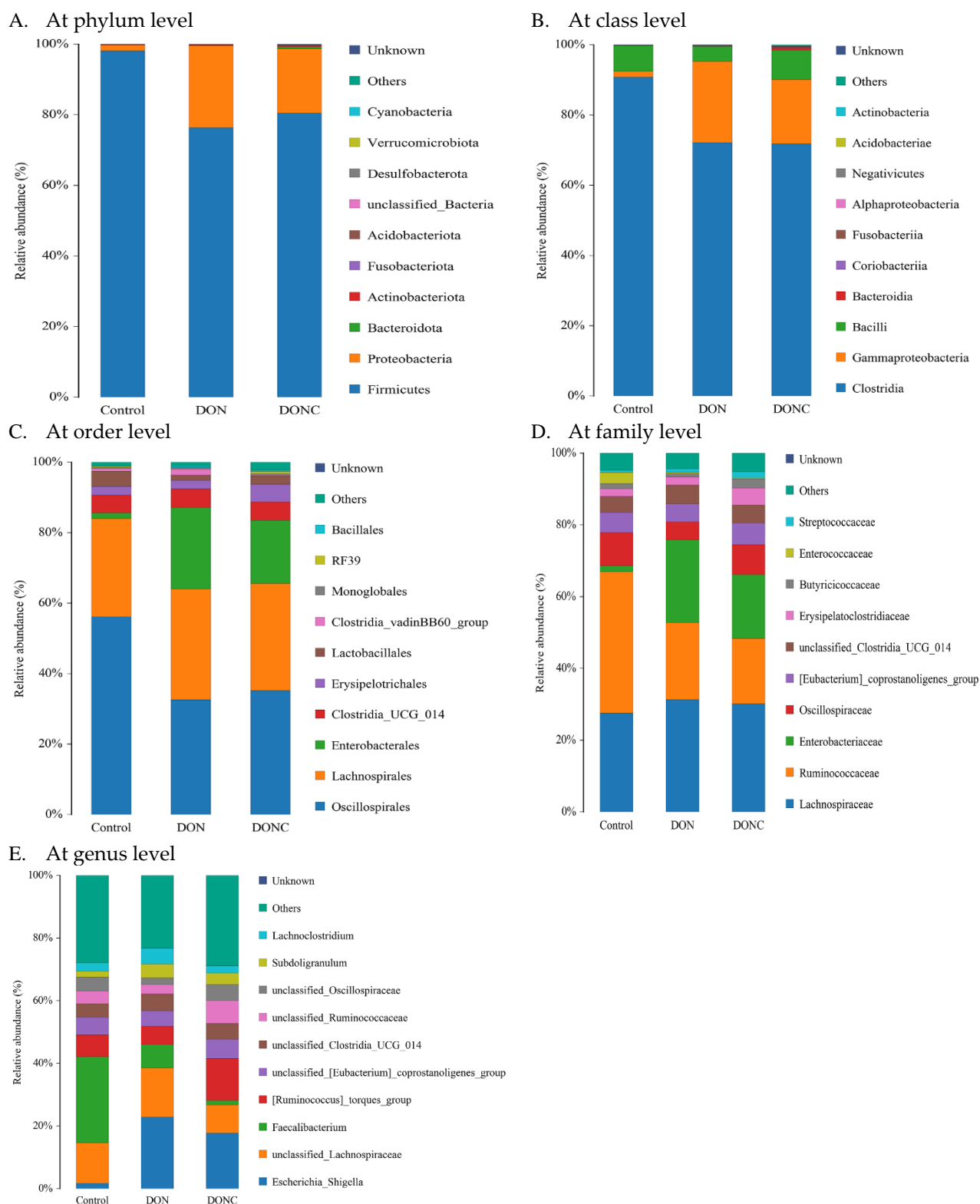
C. Chao1 index



D. ACE index

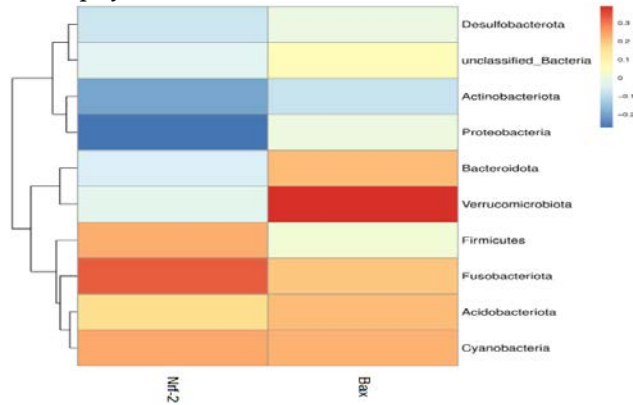


**Figure S1.** Alpha-diversity analysis of gut microbiota among groups. (A) Shannon index; (B) Simpson index; (C) Chao1 index; (D) ACE index. Control, birds were fed a basal diet; DON, birds were fed a basal diet contaminated with DON; DONC, birds were fed a DON-contaminated basal diet supplemented with 200 U/kg CAT.

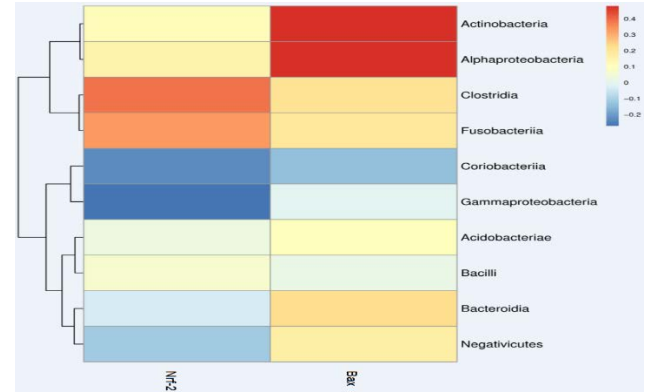


**Figure S2.** Gut microbial composition of broilers at phylum (A), class (B), order (C), family (D) and genus (E) levels. Control, birds were fed a basal diet; DON, birds were fed a basal diet contaminated with DON; DONC, birds were fed a DON-contaminated basal diet supplemented with 200 U/kg CAT.

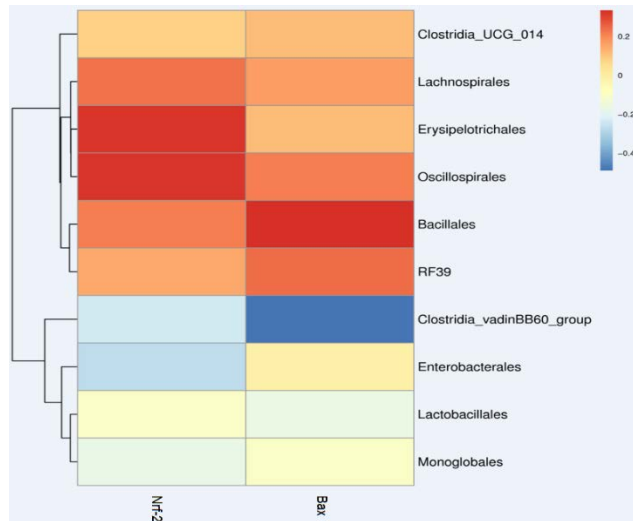
A. At phylum level



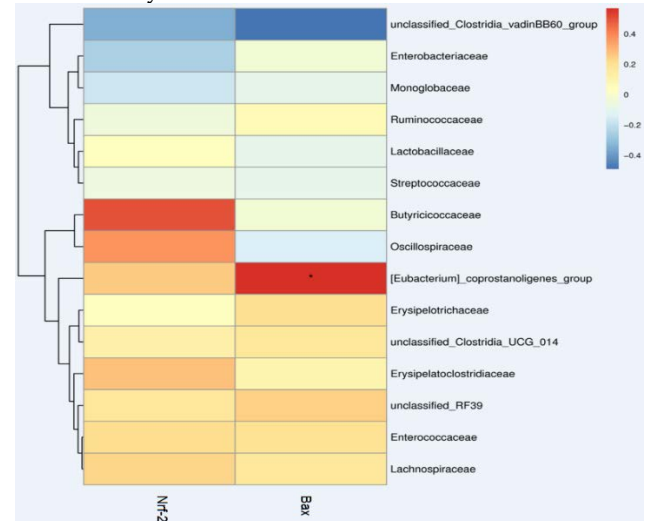
B. At class level



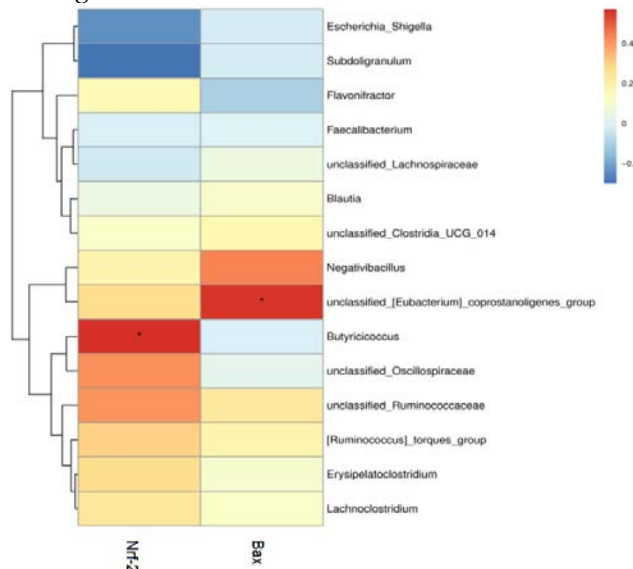
C. At order level



D. At family level



E. At genus level



**Figure S3.** Correlation analysis between gut microbiota (A, at phylum level; B, at class level; C, at order level; D, at family level; E, at genus level) and intestinal gene expression in broilers. Bax, Bcl-2 associated X protein; Nrf2, nuclear factor erythroid-2 related factor. The red and blue panes represent positive and negative correlations, respectively. Color intensity means the Spearman's r-value of correlations in each panel. The asterisks indicate significant correlations ( $*p < 0.05$ ). Control, birds were fed a basal diet; DON, birds were fed a basal diet contaminated with DON; DONC, birds were fed a DON-contaminated basal diet supplemented with 200 U/kg CAT.