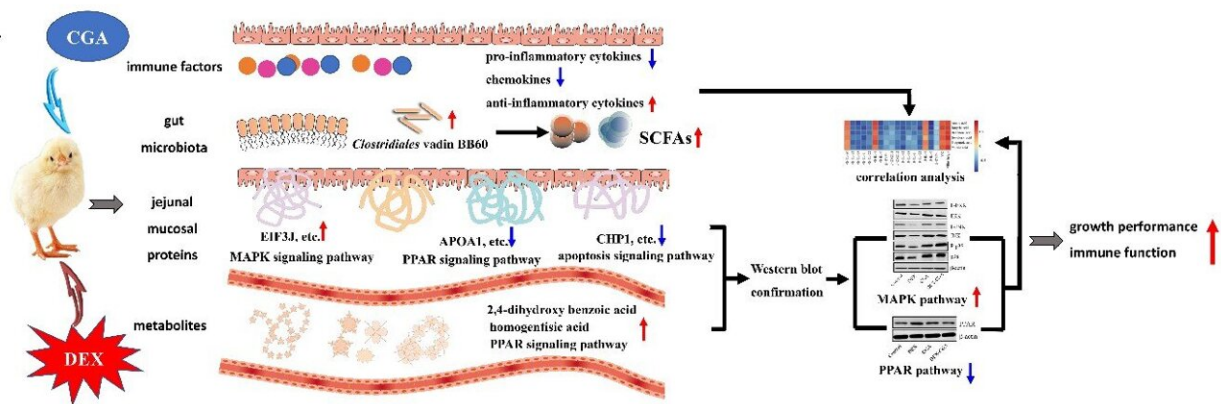


Roles of chlorogenic acid in regulating growth performance and immune function of broilers

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Roles of Chlorogenic acid in Regulating Growth Performance and Immune Function of Broilers. Credit: Huawei Liu, et al

Intensive farming practices have gained popularity in recent decades, largely due to the escalated demand for poultry products. Nonetheless, the high stocking densities these methods employ have amplified the susceptibility of commercial broilers to numerous stress factors.

Of these, immunological stress is particularly concerning as it leads to stunted growth and intestinal damage. As a result, the development and

implementation of nutritional strategies are anticipated to become an effective means of mitigating such immunological stress.

A recent study led by Professor Jinshan Zhao's Lab at the Qingdao Agricultural University in China, investigated the positive impacts of chlorogenic acid (CGA) on broilers experiencing immunological [stress](#) induced by dexamethasone. This exploration was carried out through comprehensive multi-omics analyses. CGA, a phenolic acid, is produced by numerous plants including tea, coffee, and a variety of Chinese herbs.

The team's findings, published in *Animal Nutrition*, indicate that the dietary inclusion of CGA enhances the growth performance, intestinal barrier function, and immune function of broilers. These improvements are brought about through the regulation of the gut microbiota, their corresponding metabolites, and intestinal proteins.

"In this study, by using microbiome, metabolites and proteomics, we found that CGA improves the growth, intestinal health and immune function by increasing the abundance of Clostridiales vadin BB60 in the cecal content, elevating the levels of gut microbiota metabolites including 2,4-dihydroxy benzoic acid and homogentisic [acid](#), and regulating the expressions of intestinal proteins, such as TMSB4X, LGMN and APOPA1", shared Zhao.

While the study offers novel insights into the mechanisms underlying the beneficial impacts of CGA, the team recommend further study to examine the specific role of each component.

More information: Huawei Liu et al, Integrated multi-omics reveals the beneficial role of chlorogenic acid in improving the growth performance and immune function of immunologically-stressed broilers, *Animal Nutrition* (2023). [DOI: 10.1016/j.aninu.2023.05.009](https://doi.org/10.1016/j.aninu.2023.05.009)

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