**Are heat-killed probiotics more effective than live ones on colon length shortness, disease activity index, and the histological score of an inflammatory bowel disease-induced murine model? : A meta-analysis**

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**Abstract:**

Inflammatory bowel disease (IBD) can affect human or animal health and probiotics (Live or Heat-killed) are microorganisms able to mitigate its symptoms. We conducted this study to compare the efficiency of heat-killed and live probiotics against colon length shortness, disease activity index (DAI), and the histological score of inflammatory bowel disease (IBD) via a meta-analysis. In February 2022, we searched the eligible papers on four databases (Google Scholar, PubMed, Science Direct, and Scopus). The effect sizes were estimated throughout standardized mean difference, and we determined the statistical heterogeneity of the effect sizes using Cochran's Q test, followed by meta-ANOVA and meta-regression analysis. We recorded 43 papers for our meta-analysis. All the probiotics had an improving or preventive effect on colon length shortness, DAI, and histological score. The live probiotics with the lowest effect sizes for DAI and the histological score had a better effect on these parameters (DAI, histological score) than heat-killed probiotics. On the other hand, the heat-killed probiotics presented a higher influence on colon length factor compared to live probiotics. The articles with live and heat-killed probiotics in the same experiment had the lowest effect sizes for colon length and intermediate effect size for DAI and histological score. Despite some limitations noticed in the results of this meta-analysis due to the lack of certain studies, it suggested that the live probiotics had globally a better impact on IBD symptoms than heat-killed probiotics.

**Biography of presenting author** (should not exceed 100 words)

Dr. Poaty Ditengou Junior Isaac Celestin studied Agronomy at Masuku University of Science and Technology, GABON and graduated as MS in 2017. He then join the Laboratory of Professor Nag-Jin Choi at Jeonbuk National University in South Korea and got his PhD in Animal Science (2022). He is currently starting a Post-Doctorate in the same laboratory and have published 2 papers on the topics of poultry nutrition and probiotic.

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