

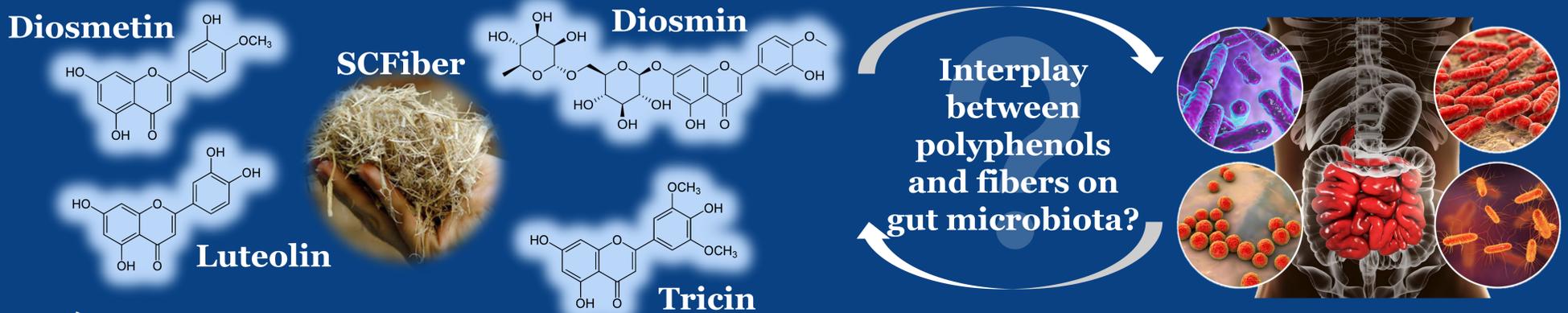
Effects of sugarcane flavones and fiber on short-chain fatty acids production and gut microbiota profile during *in vitro* colonic fermentation

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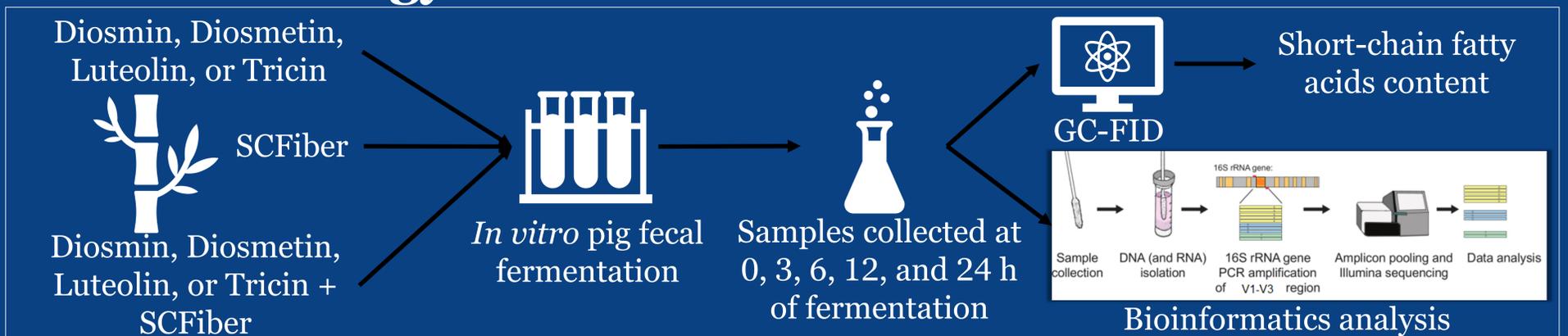
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Introduction

Dietary fibers and phenolics contribute to human health by modifying the gut microenvironment. The interactions between dietary fibers and phenolics and their synergistic effects on the gut microbiota remain unclear. In our previous study, we found that sugarcane polyphenolic extract and fiber influenced the short-chain fatty acids (SCFA) production and gut microbiota after *in vitro* digestion and fermentation. Thus, we investigate the effects of 4 flavones commonly found in sugarcane, (luteolin, tricetin, diosmin and diosmetin) and their combination with sugarcane fiber (SCFiber) on the SCFA production and gut microbiota profile, using an *in vitro* pig fecal fermentation model.

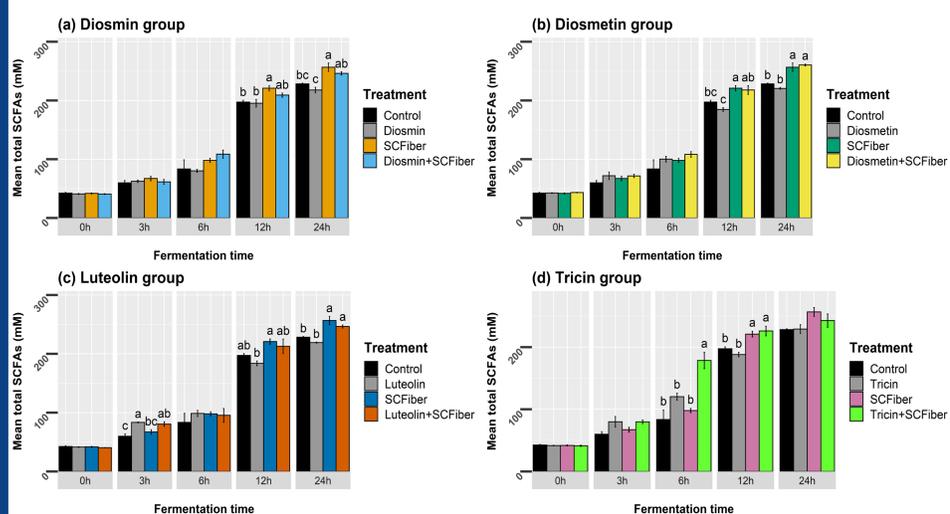


Methodology

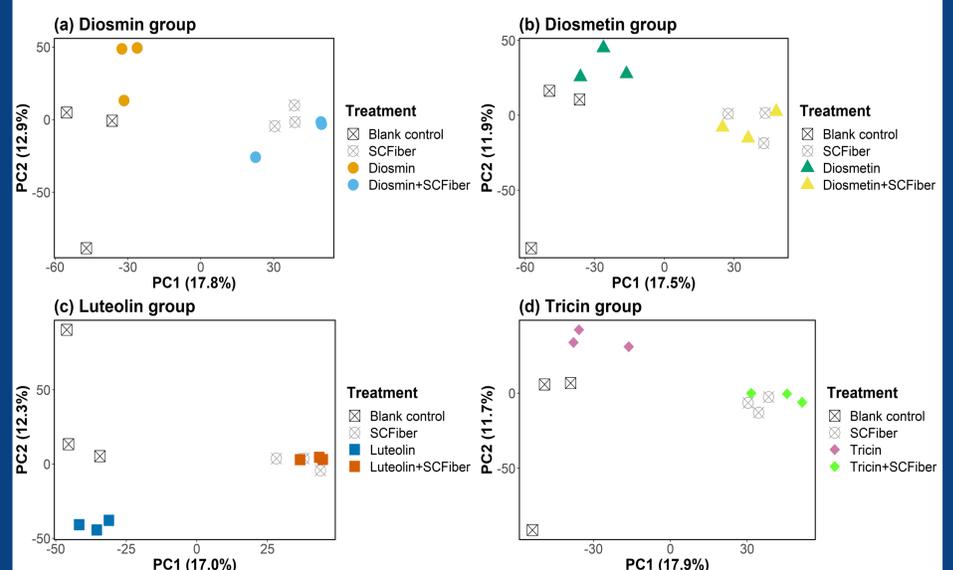


Results

Inclusion of SCFiber with diosmetin and luteolin, respectively, significantly increased the total SCFA productions (mainly contributed by increase of acetic acid) after 24h fermentation, while flavones-only showed no effect



Based on the non-parametric microbial interdependence test (NMIT), inclusion of SCFiber with diosmin, diosmetin, luteolin, and tricetin, respectively, significantly altered the pig fecal microbiota profile



Significance

Combinations of specific flavones with SCFiber may better benefit the gut health by improving the SCFA production and the gut microbiota profile

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