



Effects of prebiotics on (chole-)sterol metabolism

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Background

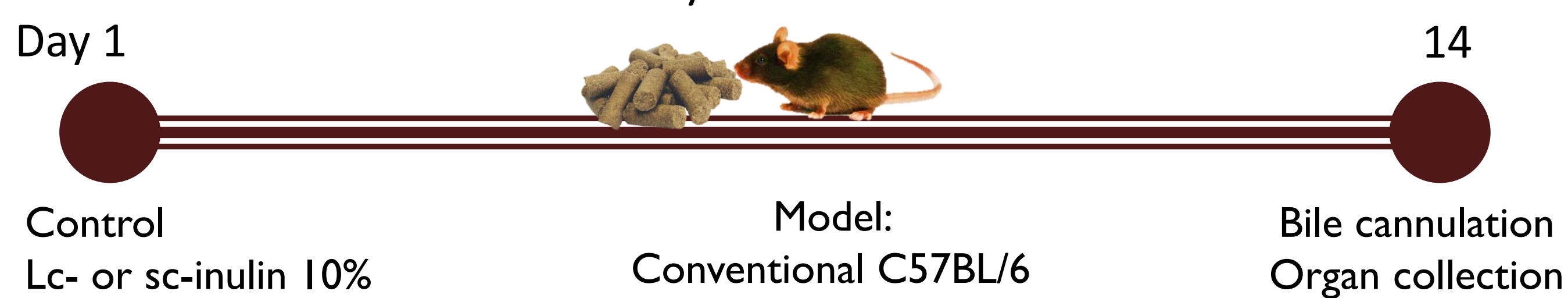
Dietary intake of prebiotics is perceived to improve health via gut microbiota-dependent generation of products such as short-chain fatty acids (SCFA). However, SCFA also serve as potential precursors for lipid and cholesterol synthesis potentially resulting in unwanted effects on lipid metabolism. Inulin is a widely used fermentable carbohydrate. Inconsistent reports have emerged in both human and animal models with respect to the effects of inulin on cholesterol homeostasis. Isomalto/malto-polysaccharides (IMMP) is a novel prebiotic derived from starch with unknown metabolic effects *in vivo*.

Aim

The aim of both studies was to provide an in-depth characterization of the effects of long chain (lc)- inulin, short chain (sc)- inulin and IMMP on (chole-)sterol metabolism.

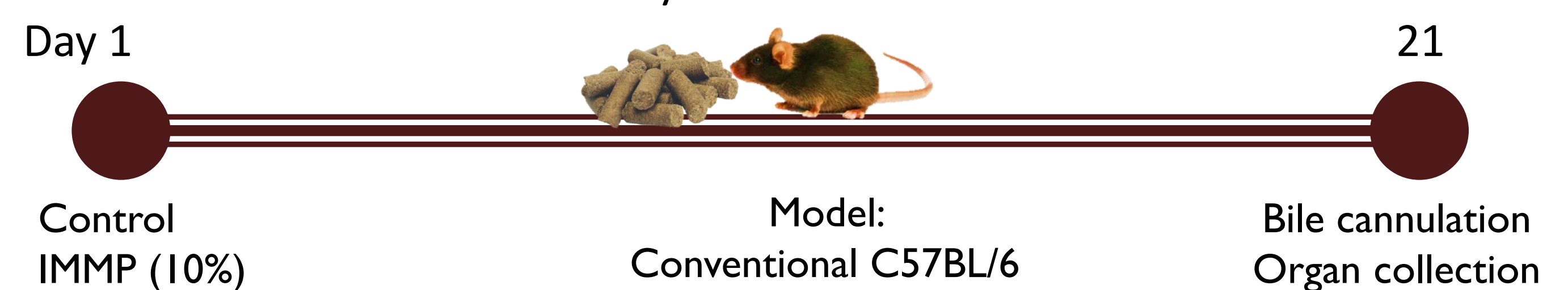
Method

Dietary intervention



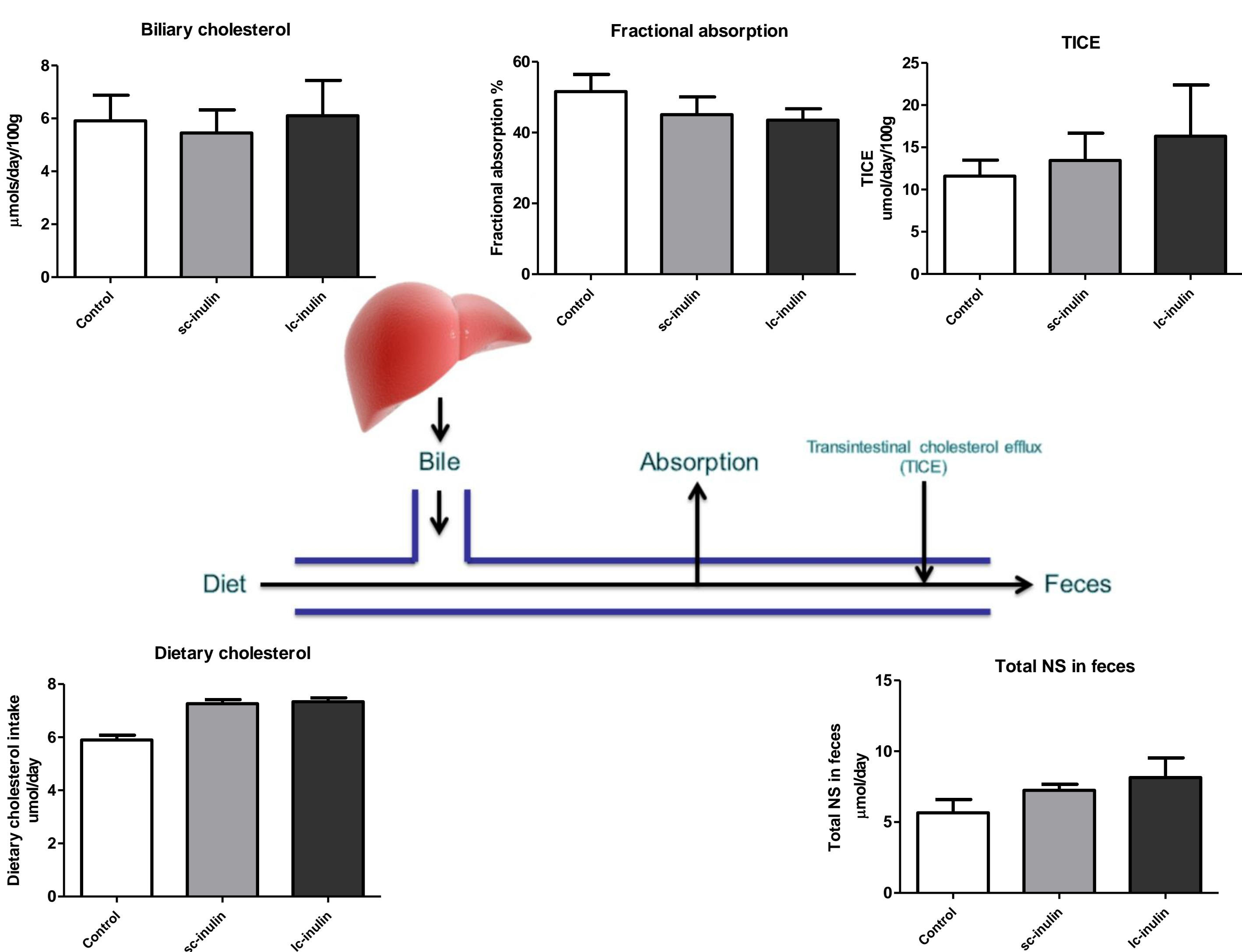
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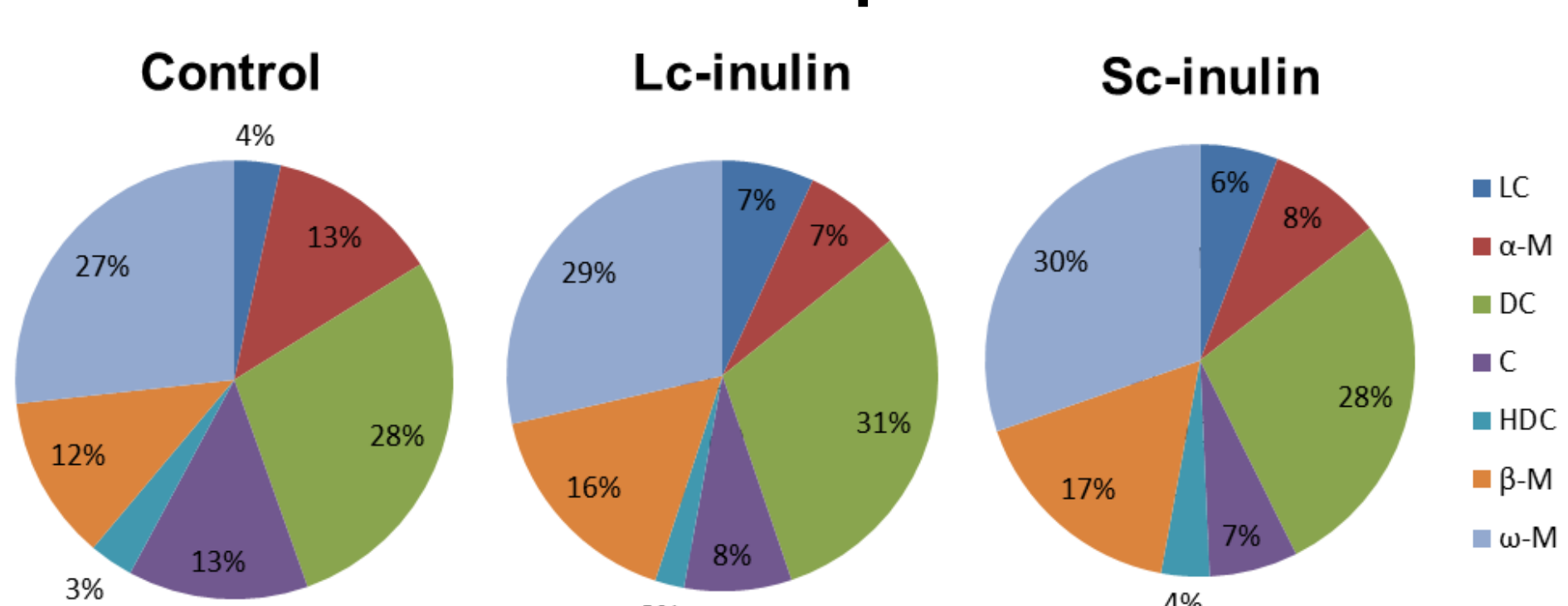


Results

Bile acid profiles slightly altered while cholesterol balance remained unchanged in response to sc- and lc- inulin feeding

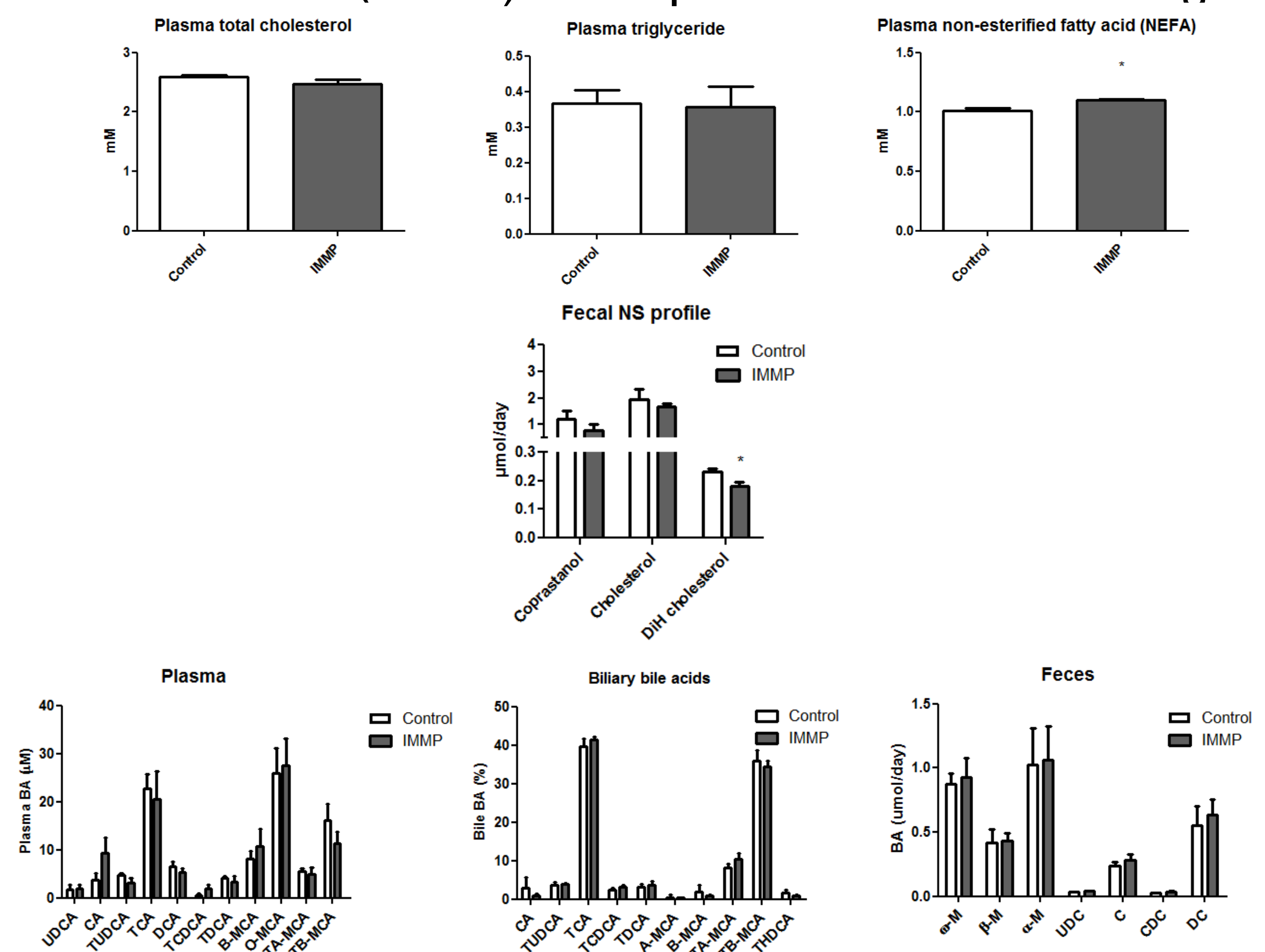


Subtle shifts occur upon inulin feeding in fecal bile acid profiles



Results

Subtle shift in (chole-) sterol profile with IMMP feeding



Conclusion

Our study demonstrates that inulins induce subtle shifts in bile acid profiles whereas IMMP has mild effects on neutral sterol profiles in chow-fed wildtype mice.