



Longitudinal profiling of the human gut microbiome reveals temporal and personalized responses to inulin

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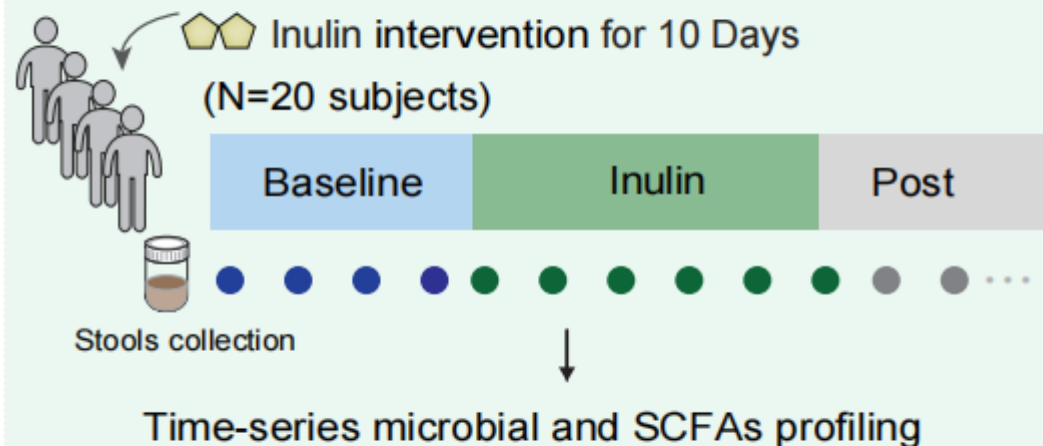


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Longitudinal profiling of the human gut microbiome reveals temporal and personalized responses to inulin.
iMetaOmics 2: e70029. <https://doi.org/10.1002/imo2.70029>

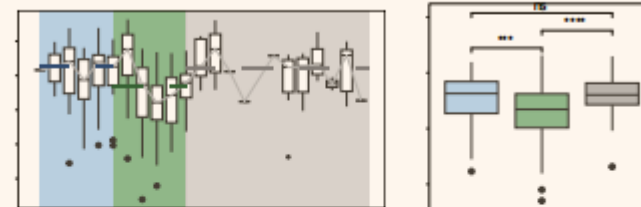


Highlights

Inulin intervention study in a cohort of healthy volunteers

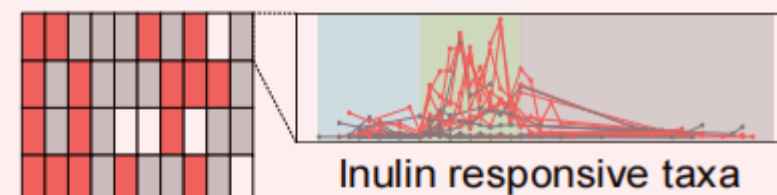


Dynamical response

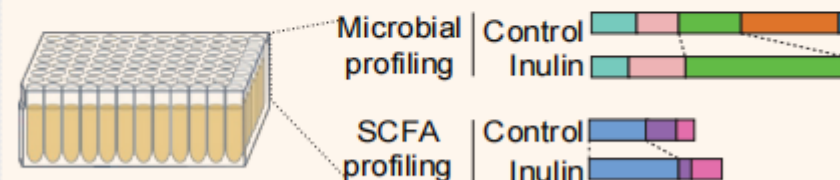


Microbial and SCFAs dynamics and response

Personalized response



In vitro culture



In vitro culture model



Microbiome composition response to inulin intervention

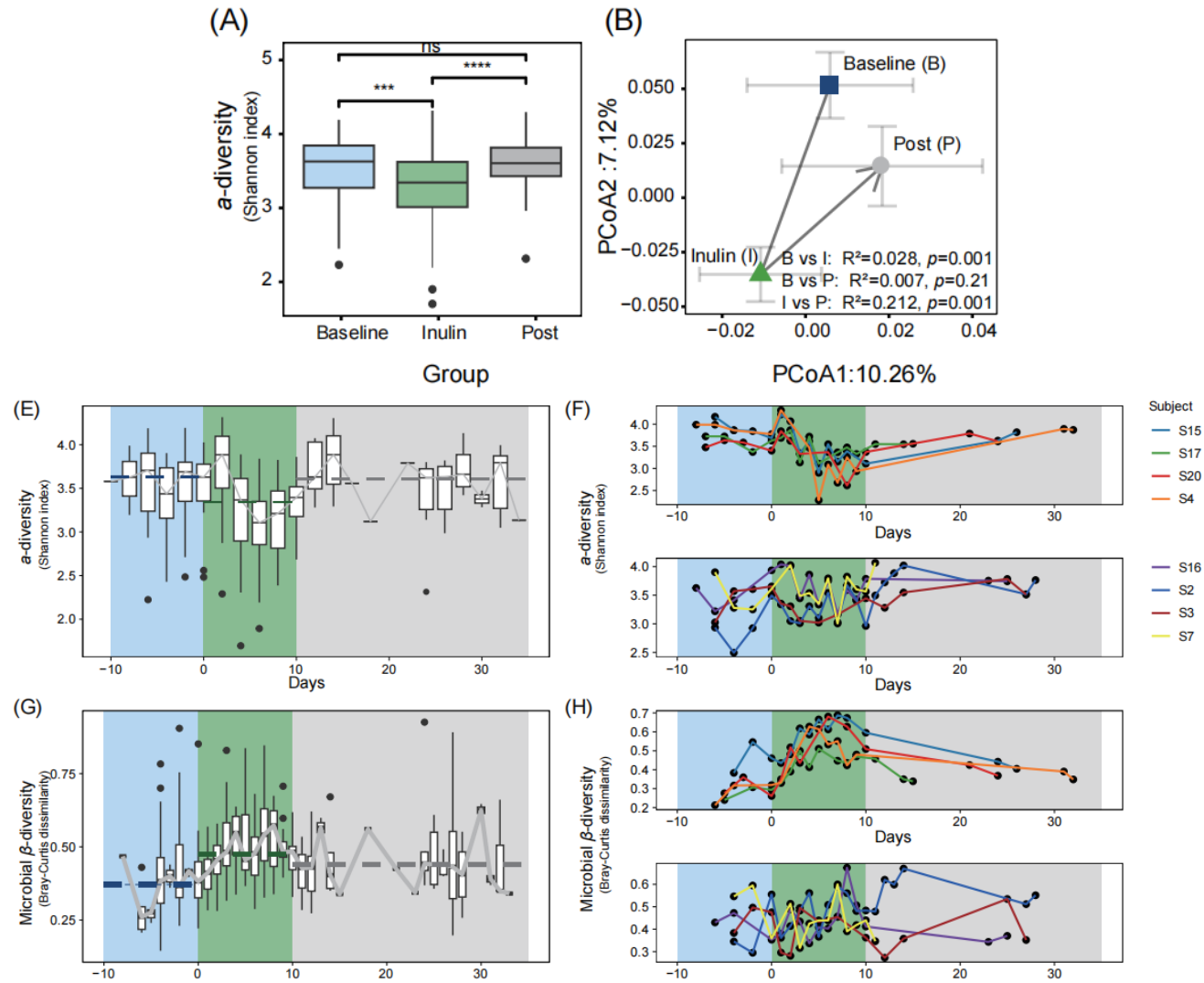


Fig1. Temporal and individualized response of microbiome composition to inulin intervention



SCFA metabolism response to inulin intervention

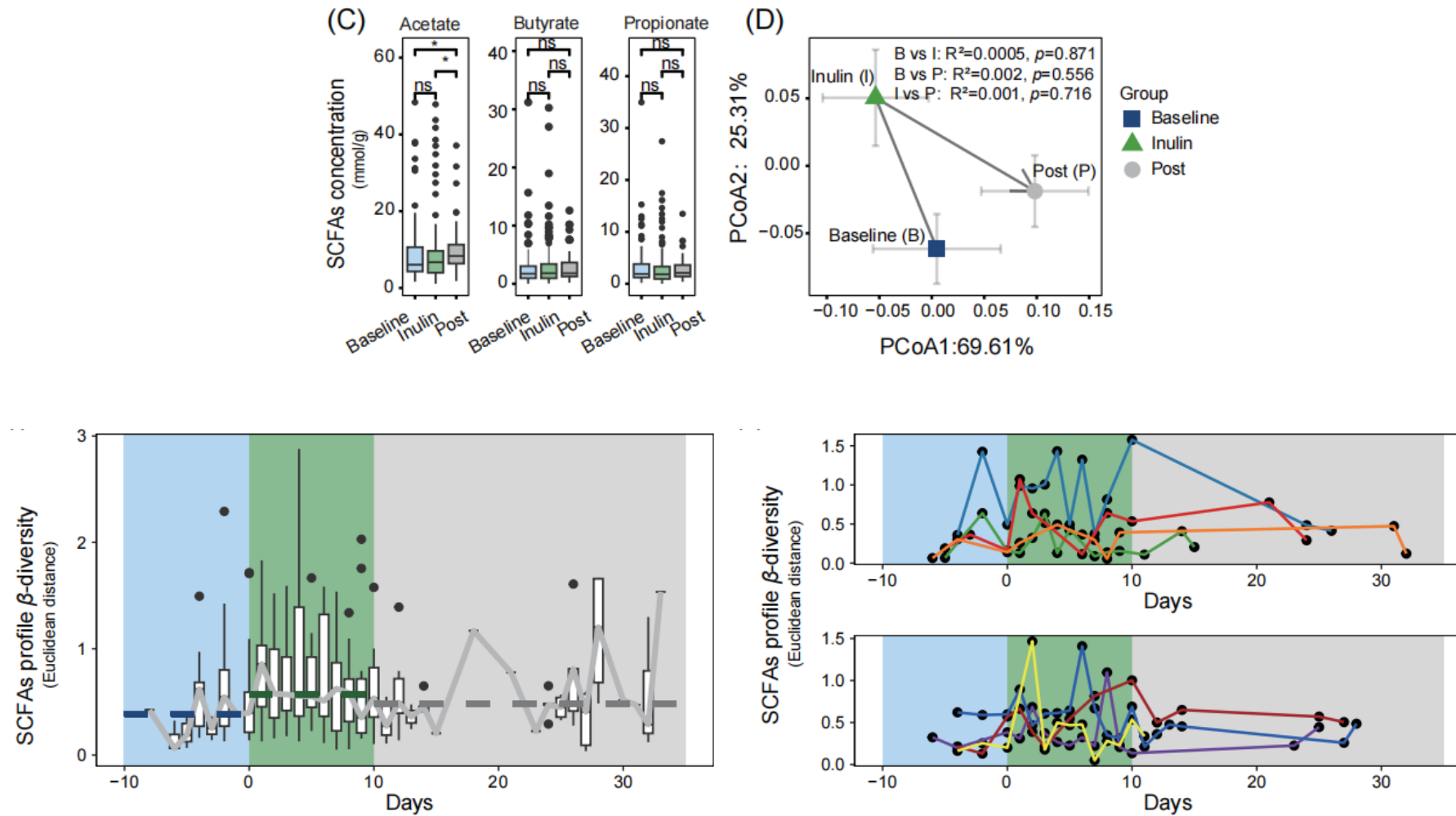


Fig1. Temporal and individualized response of SCFA metabolism to inulin intervention.

Overview of the taxa responsive to inulin intervention

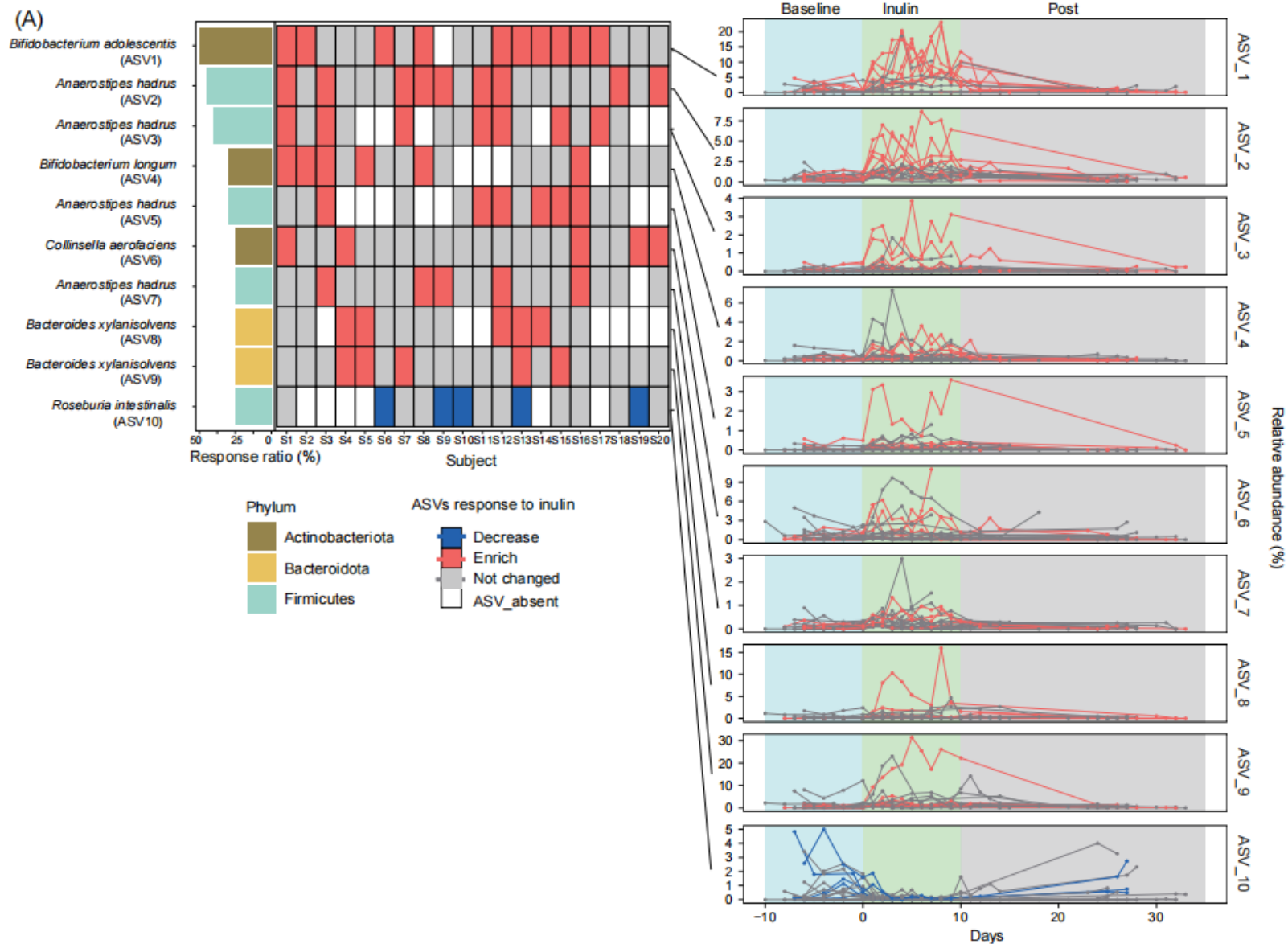


Fig 2. Overview of the taxa responsive to inulin intervention

Overview of the SCFAs responsive to inulin intervention

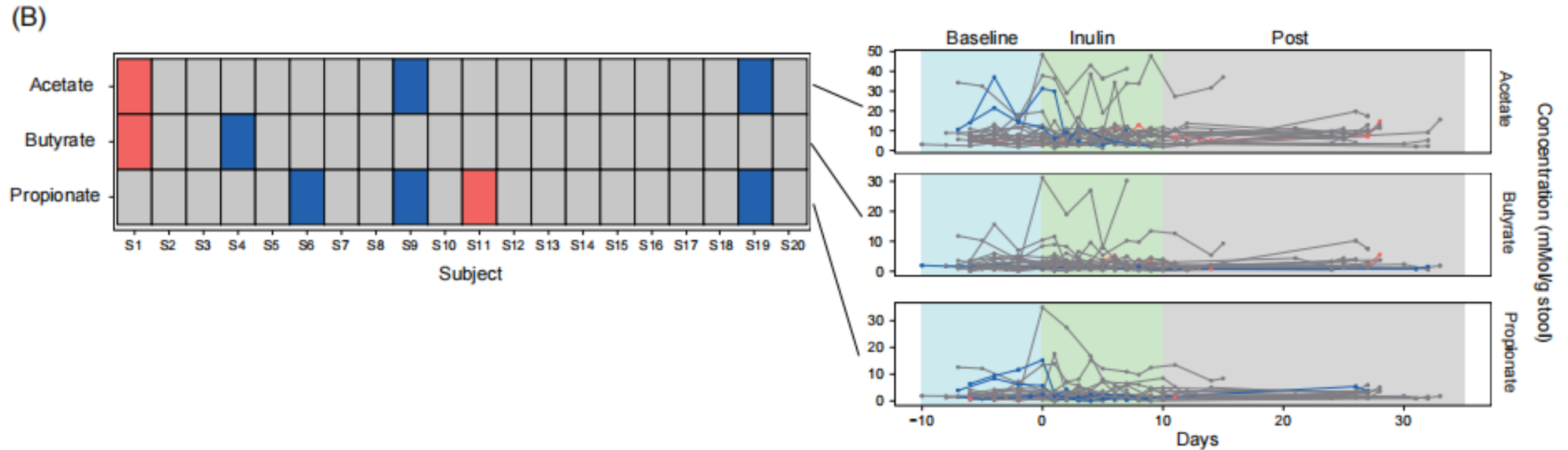


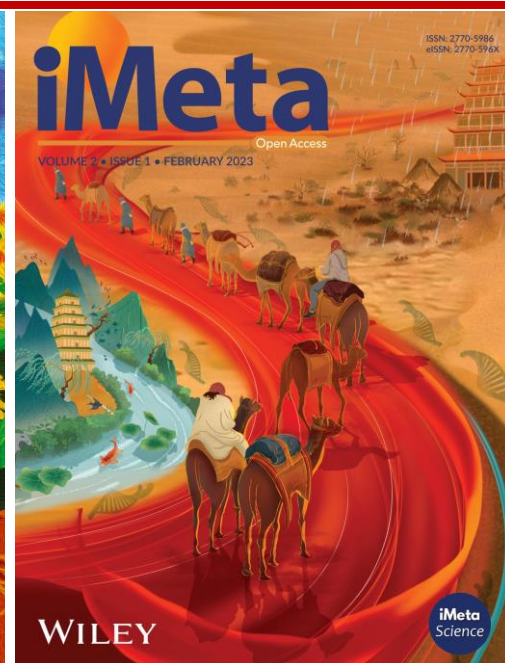
Fig 2. Overview of the short-chain fatty acids responsive to inulin intervention



Summary

- ❑ Inulin has profound, personalized, and transient impacts on the dynamics of human gut microbial compositions while exerting a more moderate influence on stool SCFA profiles
- ❑ Inulin induced enrichment of specific species, including *Bifidobacterium adolescentis*, *Bifidobacterium longum*, *Anaerostipes hadrus*, and *Bacteroides xylanisolvens*
- ❑ Personalized responses of the gut microbiome to prebiotics highlight the need for precision nutrition

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