

An important step toward next-generation probiotics

August 2 2023



Co-isolation and cross-feeding of *F. prausnitzii* and *D. piger* in vitro. **a**, Coculture of *F. prausnitzii* DSM 32186 and *D. piger* DSM 32187 on PGM plates without supplementation of glucose or acetate. **b**, Gram staining of colonies from isolation of *F. prausnitzii* DSM 32186 and *D. piger* DSM 32187. Arrows indicate *F. prausnitzii* (long fusiform rods) (1) and *D. piger* (short rods) (2). Scale bar, 10 µm. **c**, Dendrogram illustrating the relationship between *D. piger* DSM 32187 and related genomes. **d**, Dendrogram illustrating the relationship between *F. prausnitzii* DSM 32186 and related genomes. **e**, The number of colony-forming units of *F. prausnitzii* DSM 32186 in monoculture and in co-culture with *D. piger* DSM 32187 under anaerobic conditions in mPGM (PGM containing 25 mM of glucose) for 24 h. *P* = 0.0003. **f**, Metabolite profiles of *F. prausnitzii* DSM 32186 and *D. piger* DSM 32187 cultivated as monocultures or co-culture under



anaerobic conditions in mPGM medium for 24 h. Glucose: P = 0.0000031 (*F. prausnitzii* + *D. piger* versus *D. piger*), P = 0.0000038 (*F. prausnitzii* + *D. piger* versus *D. piger*), P = 0.0000005 (*F. prausnitzii* versus *D. piger*), P = 0.00014 (*F. prausnitzii* + *D. piger* versus *F. prausnitzii*); acetate: P = 0.0000004 (*F. prausnitzii* + *D. piger* versus *F. prausnitzii*); acetate: P = 0.0000004 (*F. prausnitzii* + *D. piger* versus *D. piger*), P = 0.0000003 (*F. prausnitzii* versus *D. piger*); butyrate: P = 0.000001(*F. prausnitzii* + *D. piger* versus *D. piger*); butyrate: P = 0.000001(*F. prausnitzii* + *D. piger* versus *D. piger*); butyrate: P = 0.000001(*F. prausnitzii* + *D. piger* versus *D. piger*); butyrate: P = 0.000001(*F. prausnitzii* + *D. piger* versus *F. prausnitzii*). 'mM change' on the *y* axis indicates the difference in concentration from the inoculated medium at baseline. **g**, Schematic of the suggested cross-feeding between *F. prausnitzii* and *D. piger* as co-culture in mPGM. n = 3 independent experiments, ***P

Citation: An important step toward next-generation probiotics (2023, August 2) retrieved 8 May 2024 from <u>https://medicalxpress.com/news/2023-08-important-next-generation-probiotics.html</u>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.