Supporting Information: A lipolysis-permeation setup for simultaneous study of digestion and absorption *in vitro*

Janneke Keemink, Elin Mårtensson, Christel A.S. Bergström

Figure S1 Apparent free fatty acid release during *in vitro* lipolysis of F1, F2 and F3 with pancreatic extract or immobilized lipase.

Figure S2 Danazol distribution across the aqueous, oil and pellet phases following 90 min of digestion.

Figure S3 The pH in the digestion chamber and the lucifer yellow transfer across monolayers to the receiver chamber over time during an *in vitro* digestion of F1, F2 and F3 performed in the lipolysis-permeation setup.

Figure S4 Dissolved, supersaturated, precipitated and permeated fenofibrate during lipolysis-permeation experiments with F4-F5 and the *in vitro-in vivo* correlation (IVIVC) between these parameters and plasma exposure in pigs.

Figure S1 Apparent free fatty-acid release during *in vitro* lipolysis of F1 (A), F2 (B) and F3 (C) with pancreatic extract (closed symbols) or immobilized lipase (open symbols). Data represent average values ± SD (n=3). For compositions of the formulations, see Table 1.

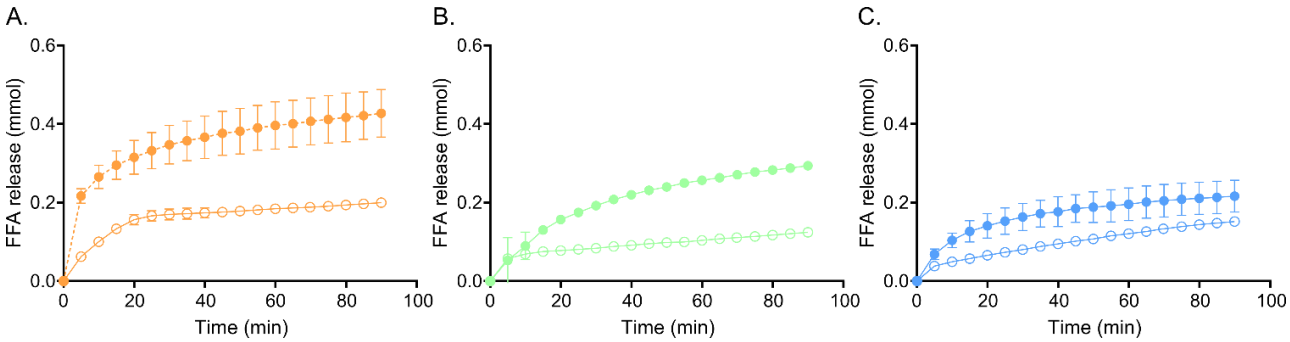

Figure S2 Danazol distribution across the solid (bottom, darkest color), aqueous (middle) and oil (top, lightest color) phases following 90 min of digestion with pancreatic enzyme (PE) or immobilized lipase (IL). The oil phase was absent during the dispersion and digestion of F3. Values are expressed as average values ± SD (n=3). For compositions of the formulations, see Table 1.

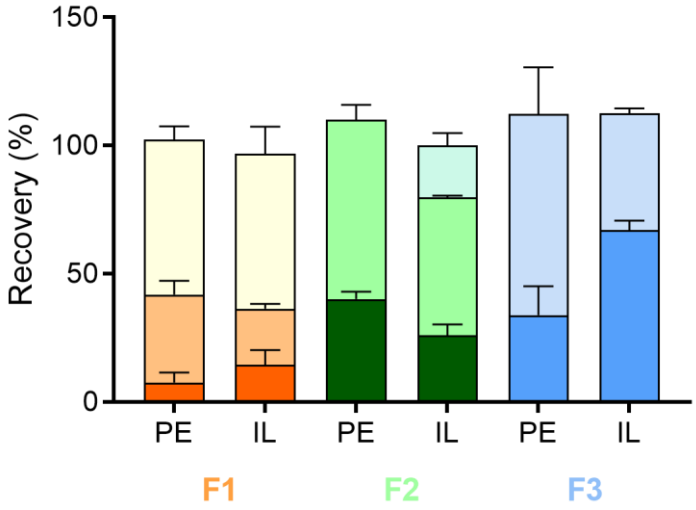

Figure S3 The pH (green line) in the digestion chamber and the Lucifer Yellow transfer across monolayers to the receiver chamber (yellow triangles) over time during an *in vitro* digestion of F1 (A), F2 (B) and F3 (C), performed in the lipolysis-permeation setup. For the compositions of the formulations, see Table 1.

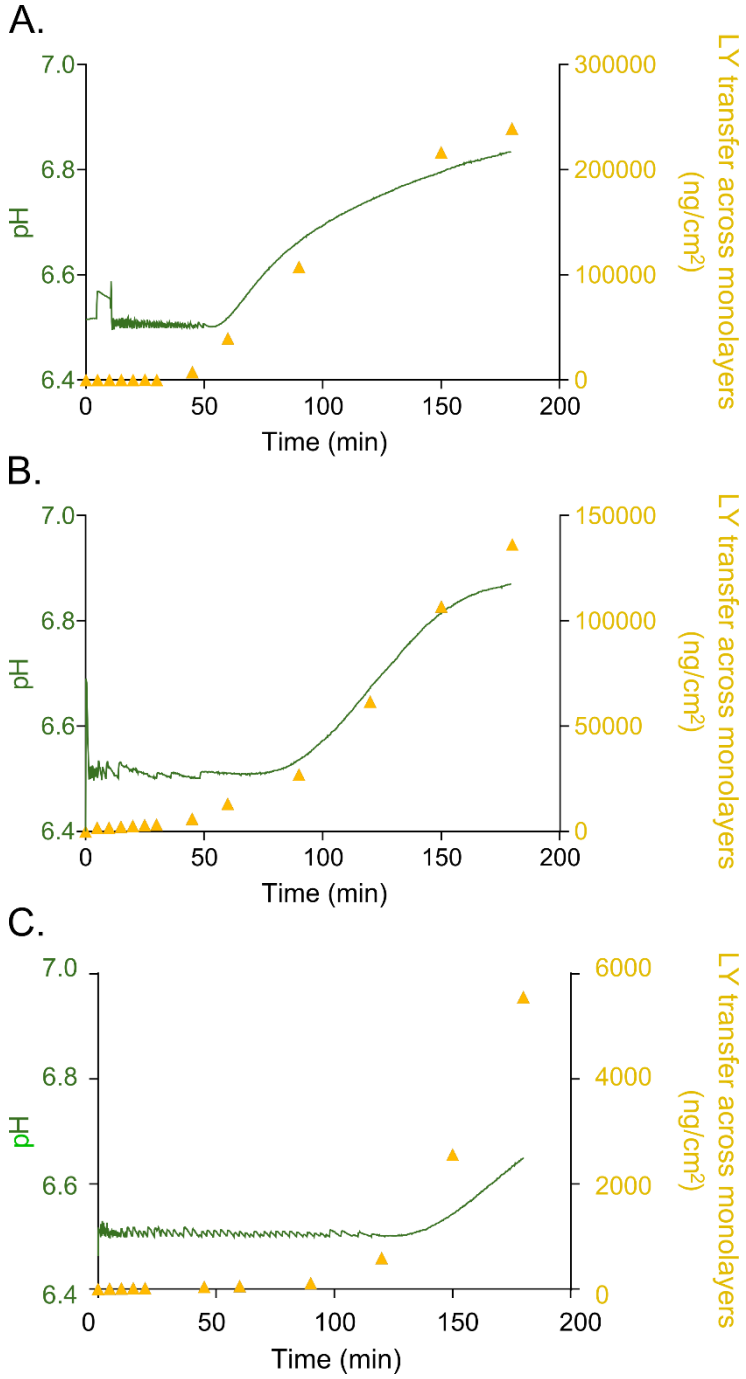

Figure S4 Dissolved, supersaturated, precipitated and permeated fenofibrate during lipolysis-permeation experiments with F4-F6 and the *in vitro in vivo* correlation (IVIVC) between these parameters and plasma exposure in pigs. For the compositions of the formulations, see Table 1. A. Fenofibrate solubilization in the aqueous phase (AP) *vs.* time. B. Area under the curve (AUC) of fenofibrate in the AP *vs.* time profiles C. *IVIVC* between plasma exposure in pigs and the AUC of fenofibrate in the AP *vs.* time D. Fenofibrate supersaturation ratios *vs.* time. E. AUC of fenofibrate supersaturation ratios *vs.* time profiles F. *IVIVC* between plasma exposure in pigs and AUC of fenofibrate supersaturation ratios *vs.* time G. Fenofibrate precipitation *vs.* time H. AUC of fenofibrate precipitation *vs.* time profiles I. *IVIVC* between plasma exposure in pigs and the AUC of fenofibrate precipitation *vs.* time J. Fenofibrate permeation across Caco-2 layers *vs.* time K. AUC of fenofibrate permeation across Caco-2 layers *vs.* time profiles. L. *IVIVC* between plasma exposure in pigs and the AUC of fenofibrate permeation across Caco-2 layers *vs.* time. The gray and white areas in Figure A, D, G and J represent the dispersion and the white digestion time. Blue, green and red colors represent results for F4, F5 and F6, respectively. Values are expressed as average values ± SD (n=3). Statistically significant differences are indicated with **** $p < 0.0001$ and *** $p < 0.001$.