Supporting Information

Predicting nanocarrier permeation across the human intestine *in vitro*: Model matters

Nathalie Jung[1], Jonas Schreiner[1], Florentin Baur[1], Sarah Vogel-Kindgen[1], Maike Windbergs[1]**

[1] Institute of Pharmaceutical Technology, Goethe University Frankfurt, 60438 Frankfurt am Main, Germany

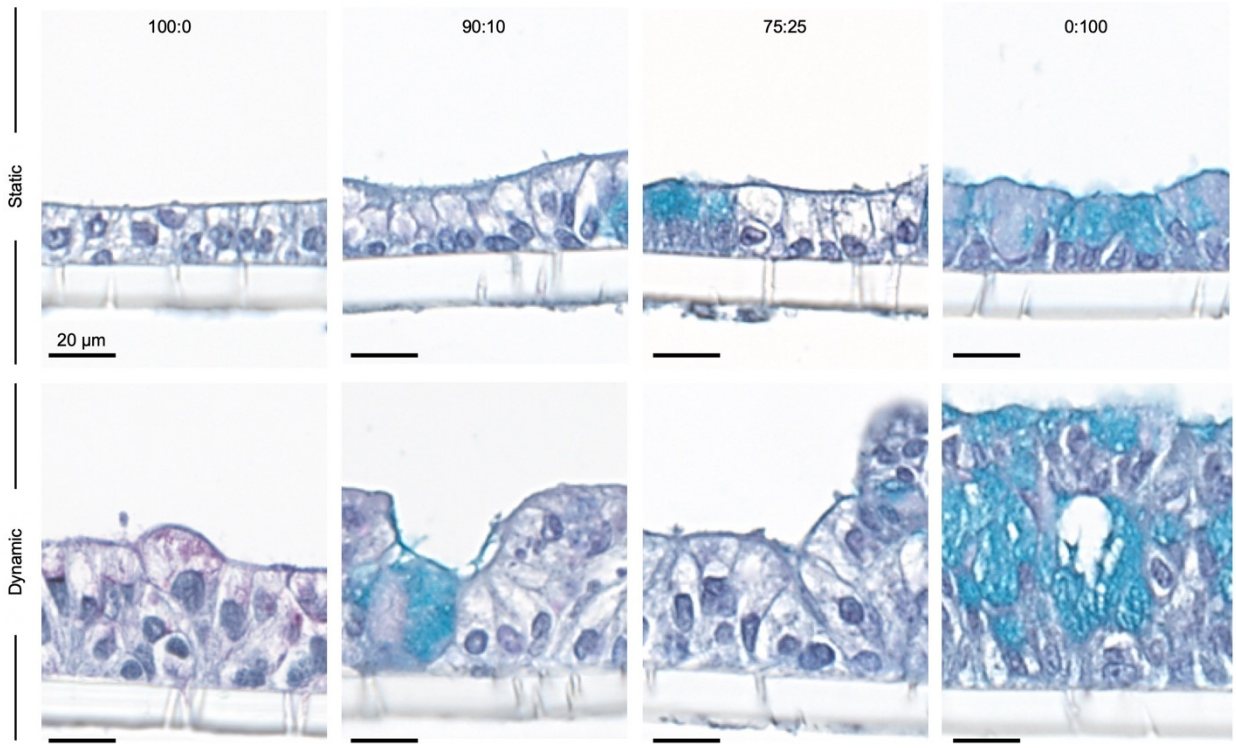

Figure S1: Histology details. Magnification of alcian blue/PAS staining of histological sections of *in vitro* tissue models cultured under static or dynamic conditions. Scale bars: 20 µm.

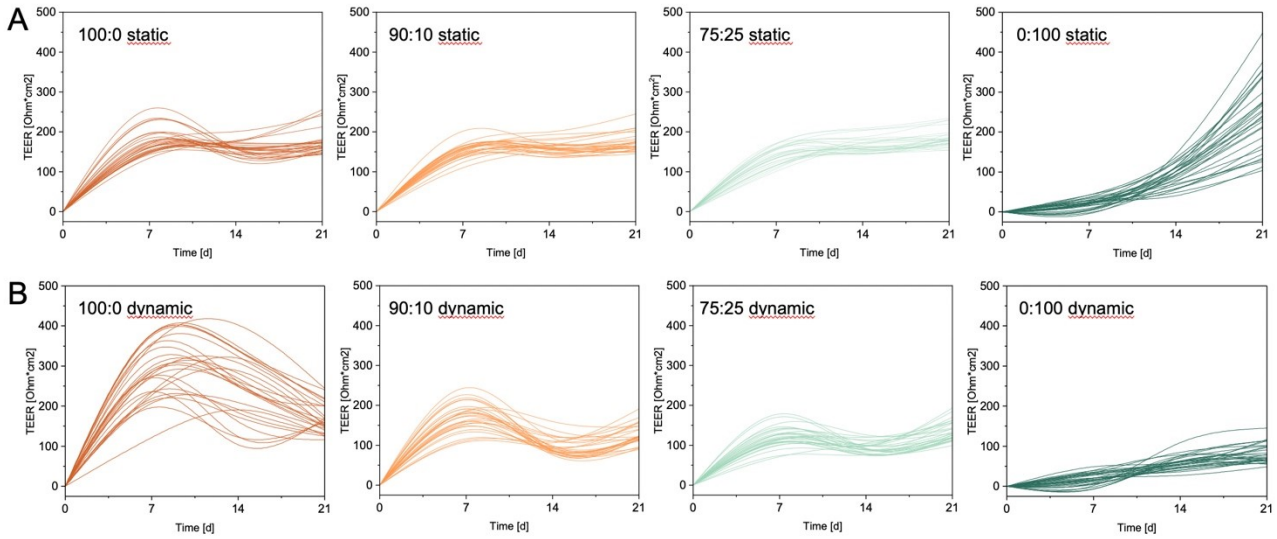

Figure S2: Development of transepithelial electrical resistance (TEER). Single TEER values of different *in vitro* models over 21 days. Each line in the spline graphs represents a single culture of the respective *in vitro* model.

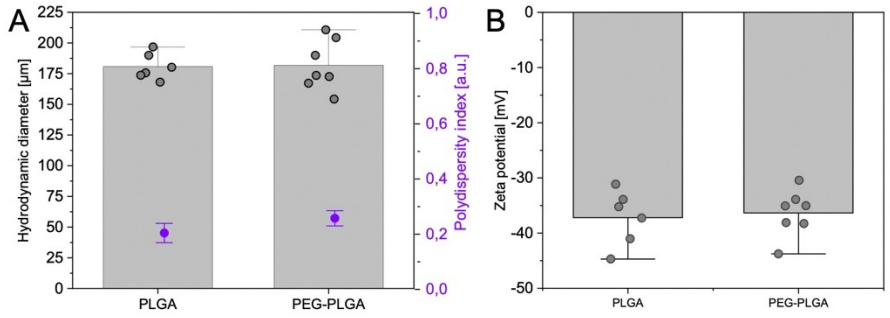

Figure S3: Nanocarrier characterisation. Nanocarrier hydrodynamic diameter, polydispersity index (A) and surface charge (B).

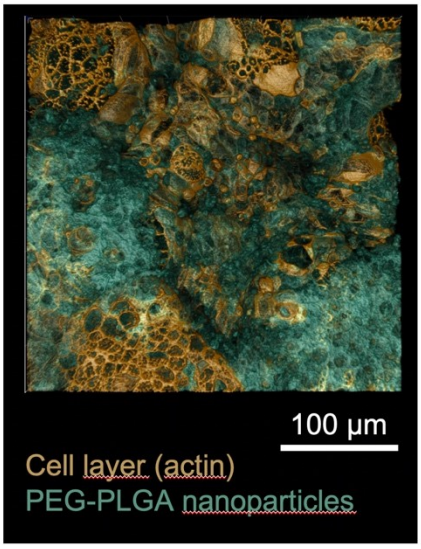

Figure S4: Fluorescence staining of in vitro model after permeation experiment. Confocal fluorescence image of dynamic 75:25 culture after transport study with PEG-PLGA nanocarriers.

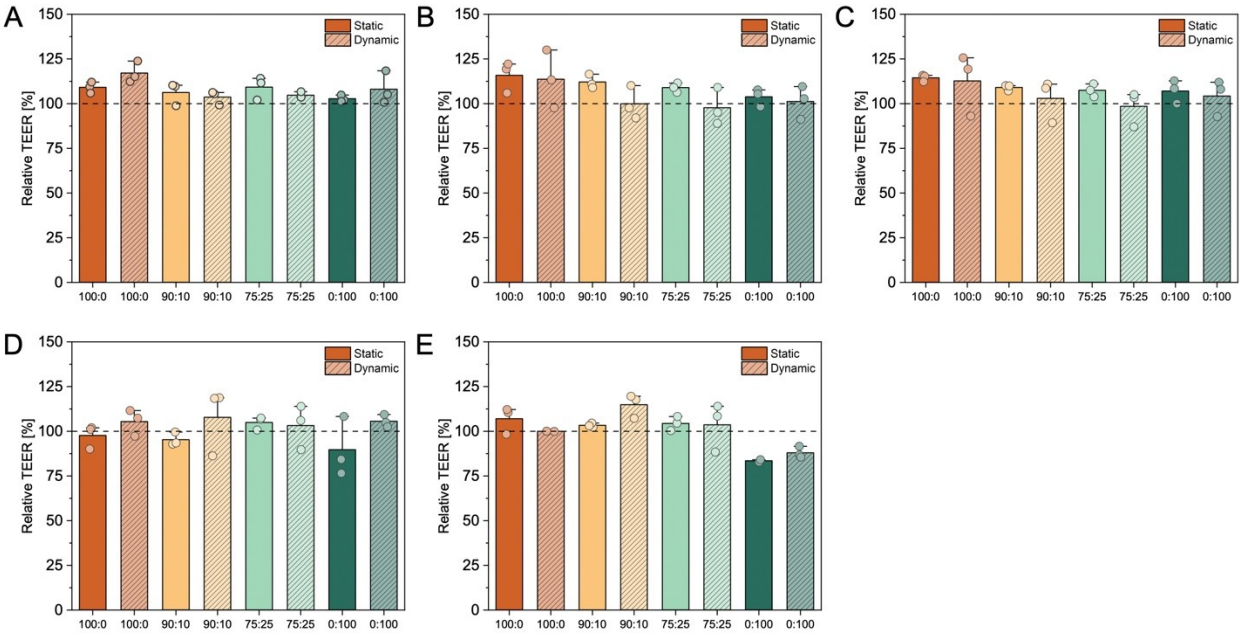

Figure S5: Investigation of adverse effects of FITC-dextran and nanocarriers. Relative transepithelial electrical resistance (TEER) after permeation testing of 4 kDa FITC-dextran (A), PLGA nanocarriers (B), and PEG-PLGA nanocarriers (C). Cell viability of different *in vitro* models after 24 h incubation with PLGA nanocarriers (D) and PEG-PLGA nanocarriers (E).