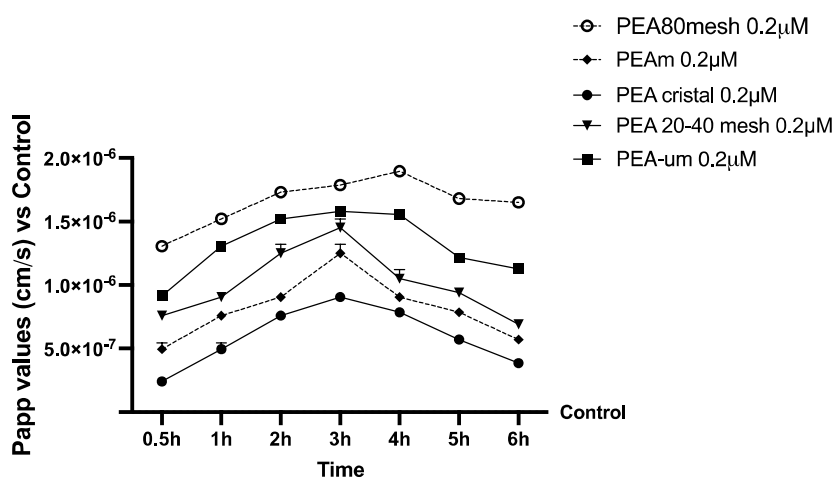




## Supplementary Material



| Sample                   | 1h  | 2h  | 3h  | 4h  | 5h  | 6h  |
|--------------------------|-----|-----|-----|-----|-----|-----|
| PEA80mesh 0.2 $\mu$ M    | 44% | 52% | 58% | 62% | 48% | 36% |
| PEAm 0.2 $\mu$ M         | 22% | 28% | 31% | 35% | 33% | 25% |
| PEA cristal 0.2 $\mu$ M  | 12% | 18% | 21% | 25% | 23% | 19% |
| PEA20-40mesh 0.2 $\mu$ M | 30% | 33% | 38% | 43% | 35% | 28% |
| PEAum 0.2 $\mu$ M        | 40% | 47% | 50% | 53% | 45% | 32% |

**Figure S1.** Permeability study on CaCo-2 cells. Regarding the Papp values data  $< 0.2 \times 10^{-6}$  cm/s means very poor absorption with a bioavailability  $< 1\%$ , data between  $0.2 \times 10^{-6}$  and  $2 \times 10^{-6}$  cm/s with bioavailability between 1 and 90 %, and data  $> 2 \times 10^{-6}$  cm/s means very good absorption with a bioavailability over 90 %. PEA-m=PEA micronized, PEA-um= PEA ultra-micronized.