

In vitro 消化管吸収評価 (Caco-2細胞)

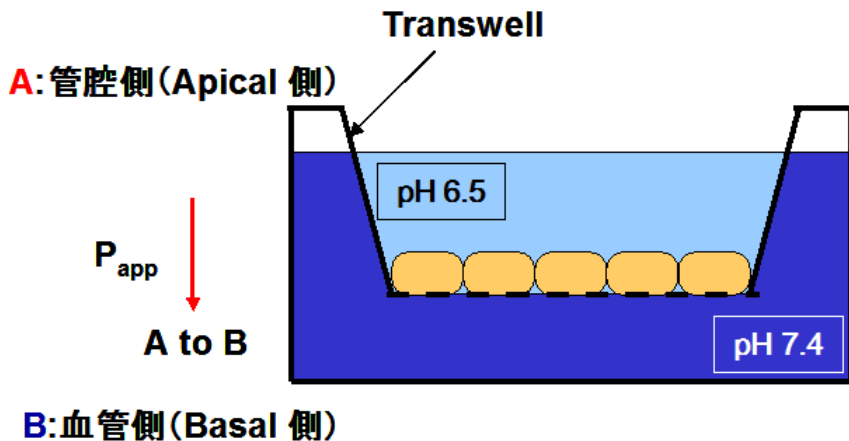
被験物質の消化管吸収を予測するために、Caco-2細胞を介した薬物吸収性を評価します。

細胞

- Caco-2細胞(理化学研究所)

方法

- Transwellに細胞を播種後、21日目に実験

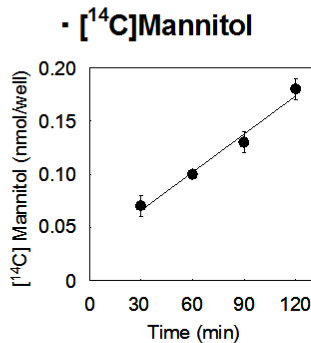
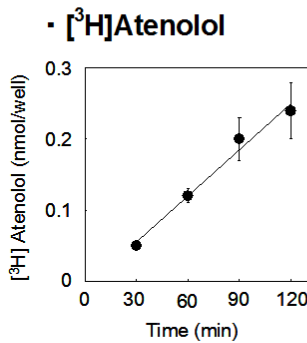
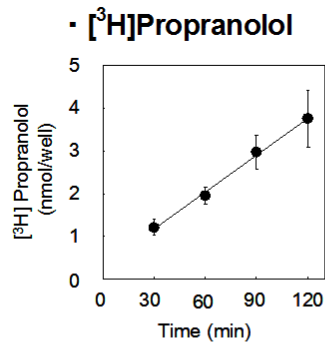
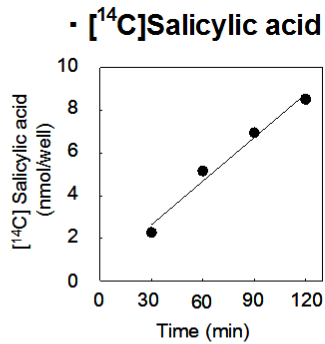
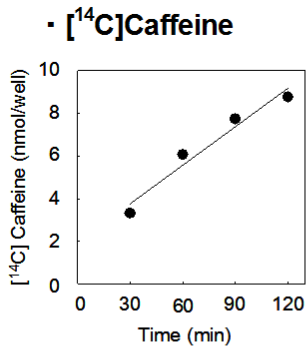


$$P_{app} = \frac{dQ}{dt} \cdot \frac{1}{A \times C_0}$$

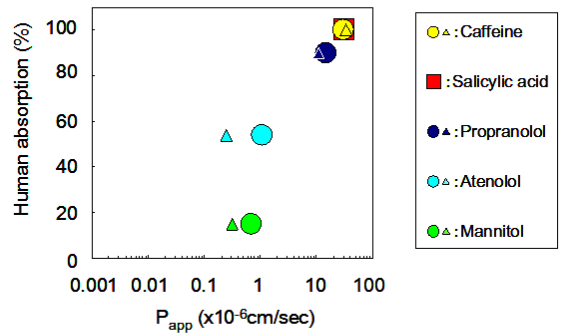
P_{app} : 膜透過係数 A : Caco-2細胞単層膜の表面積

$\frac{dQ}{dt}$: 透過速度 C_0 : 被験物質初濃度

Permeability Assay (100 μmol/L)



《ヒト消化管吸収率とCaco-2膜透過係数の相関》



●: A → B

Data are represented as mean \pm S.D. (n = 3)

Closed circles and square represent our P_{app} data. Closed triangles represent P_{app} reference data.

References for human absorption and P_{app}
Marino, A.M. et al International Journal of Pharmaceutics, 297 (2005) 235

Compounds	$[^{14}\text{C}]$ Caffeine	$[^{14}\text{C}]$ Salicylic acid	$[^3\text{H}]$ Propranolol	$[^3\text{H}]$ Atenolol	$[^{14}\text{C}]$ Mannitol
P_{app} ($\times 10^{-6}$ cm/s)	30.45 ± 1.40	34.57 ± 2.43	14.66 ± 4.60	1.07 ± 0.25	0.69 ± 0.03

Data are represented as mean \pm S.D. (n = 3)

References for P_{app} ($\times 10^{-6}$ cm/s), Caffeine: 33.1 ± 1.40 , Propranolol: 11.1 ± 0.14 , Atenolol: 0.25 ± 0.04 , Mannitol: 0.32 ± 0.05

Marino, A. M. et al. International Journal of Pharmaceutics, 297 (2005) 235