

Intestinal permeability and transport of apigenin across caco-2 cell monolayers

ABSTRACT

Investigation on bioavailability was carried out by determining the absorption and transport of bioaccessible apigenin from *Mangifera indica* (Water Lily var.) into Caco-2 human intestinal cell using a reliable and sensitive analytical method of LC-MS/MS. Results revealed that the concentration of glucuronidated apigenin lower than apigenin. The apigenin was metabolised inside the cells through glucuronidation process, and cross the monolayer to reach the basolateral sides or effluxed back to the apical side. The permeability coefficient of apigenin from apical to basolateral sides and basolateral to apical sides showed a medium permeability was less than $20 \times 10^{-6} \text{ cm}\cdot\text{sec}^{-1}$. Since the value of efflux ratio was 1.5, it suggested that the apigenin was absorbed and transported through a simple diffusion mechanism.

Keyword: Bioavailability; Permeability coefficient; Apigenin; LC-MS/MS