Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **30** (1): 33-8 (2011)

Original Article

Received: February 12, 2010
Accepted: April 22, 2010

Standardization of Caco-2 Cell Culture as *In Vitro* Model for Intestinal Permeability

Yanina I. RODRÍGUEZ*, Ivana S. ABALOS, Verónica LOZANO, Marina CERESETO, Nicolás G. SILBERMAN, Carlos CHIALE, Elena GRUÑEIRO & Guido PESCE

Instituto Nacional de Medicamentos (INAME), Departamento de Farmacología. Av. Caseros 2161 (1264), Buenos Aires, Argentina.

SUMMARY. **The aim of this study was to find out the optimal experimental conditions for Caco-2 cell culture (time and density) and permeability assays (diffusion system and drug concentration) in order to study the in vitro drugs permeability as a predictive method for drug absorption across intestinal epithelium. The integrity of the monolayers used in each assay was determined by measuring the transepithelial electrical resistance (TEER) and the permeability of the atenolol -a drug which is transported across the monolayers by the paracellular pathway-. The best working condition was obtained with a cell seeding of 7.10^4 cells/insert in a vertical difussion chamber. In such context, the monolayers had a TEER higher than 550 $\Omega.cm^2$ and the apparent permeability coefficient of atenolol was $0.71 \pm 0.19 \times 10^{-6}$ cm/seg.**

KEY WORDS: Atenolol, Biopharmaceutics Classification System, Caco-2, Permeability.

* Author to whom correspondence should be addressed. *Email:* yrodriguez@anmat.gov.ar