# The Effect of Piperin Derivatives on V79 Cells and Haemolytic Evaluation

Soares, J. R. F[1]., Nascimento, F. C. [1], Xavier, E. R. A. [1],Ferreira, I.R.S. [1,3], Sobral, M.V. [2], Souza, H.D.S. [2],Filho, P.F.A. [2] , Lira, B.F. [2], Melo P.S[1,3].

[1] Faculdade METROCAMP – Grupo IBMEC, Campinas, SP, Brazil;

[2] Universidade Federal do Paraíba, Ciências farmacêuticas, João Pessoa,PB, Brazil;

[3] UNICAMP – IB - Bioquímica, Campinas, SP, Brazil.

The plants are very complex species that can produce substances to modulate their own metabolism which, in turn, can produce therapeutic substances. The beginning of the use of plants as phytomedicine (called herbal) is not right, but it is estimated that for thousands of years plants are used for disease treatments. Piperine, amide present in the piperaceae, mainly pepper or black pepper (piper nigrum linn.), is commonly used in alternative medicine, being employed in treating of various human diseases. The objective of this study was to evaluate the cytotoxic effect of piperine derivatives in cell line V79 (HE-1, HE-2 and HE-3 derivatives). Viability was assessed by the MTT reduction assay (bromide [3- (4,5-dimethylthiazol-2-yl) -2,5-diphenyltetrazolium bromide], neutral red uptake and evaluation of the hemolytic effect. HE-1 derivative had the $IC_{50}$ values of 0.5 µm and 2 µm in neutral red and MTT, respectively. The HE-2 and HE-3 compounds had lower $IC_{50}$ values compared to HE -1 derivative ($IC_{50}$ values of 0.5 µm and 0 25 µm of the neutral red and MTT, respectively). In general, piperine and its derivatives showed cytotoxicity at lower concentrations in V79 cells and did not exhibit hemolytic effect. Thus, due to the fact that piperine and its derivatives have displayed high degree of toxicity, make them potential compounds for anti-cancer therapy to be studied in neoplasic cells.

**KEY-WORDS:** Black pepper; Cytotoxicity; Hemolysis.