Purple-fleshed *pitanga* decreases cell proliferation and induces cell cycle arrest in stellate hepatic cells (HSC)

Parisi, M..M¹, Denardin C.C.¹:², Terra,S.R.¹, Meira,L.A.¹, Guma, F.C.R¹

¹PPGCB-Bioquímica - ICBS/UFRGS - Porto Alegre, RS, Brasil, ²UNIPAMPA – Uruguaiana – RS, Brasil

*Eugenia uniflora* L. is a tree widely distributed in South American countries. Its fruit, which is called *pitanga* or Brazilian cherry, has different flesh colors (purple, red and orange) among which purple-fleshed *pitanga* extract (PFPE) shows the highest content of phenolic compounds. Hepatic stellate cells (HSC) are known to play an important role in the liver fibrogenic process. The GRX cell line is a HSC model. This study evaluated the possible effect of PFPE on the proliferation and viability of GRX cell line. The cells were treated with 5, 50, and 100 μg of chlorogenic acid/ml of PFPE for 24; 48, and 72 hours. Cell proliferation was assessed by counting in hemocytometer, and by the incorporation of [6-³H] thymidine. Cell cycle was assessed by propidium iodide (PI) incorporation, and apoptosis/necrosis was determined using annexin V and PI, both quantified by flow cytometry. Cell viability was evaluated by MTT (3-(4,5-dimethylthiazolyl)-2,5-diphenyl-2H-tetrazolium bromide) colorimetric assay. The cell proliferation was decreased in the groups treated with 50μg and 100μg of PFPE for 24 and 48 hours. At 72 hours, cell treatment was decreased from 5 to 100 μg of PFPE treatment. Flow citometry analysis showed a G1 cell cycle arrest and low cell death. The MTT assay showed no significant changes in cell viability at all treatment times, which was in accordance with the aforementioned low cell death. These results suggest the PFPE ability in reducing cell proliferation by cell cycle-related arrest, without affecting its viability. More studies are necessary to corroborate these findings.

**Keywords**: Cell cycle, Cell proliferation, Hepatic stellate cells, Purple-fleshed *pitanga*

Supported by: CNPq and CAPES