Monthira Srijakkoat 2007: Micronucleus Test and Comet Assay of Pigment from Bulb Culture of Hippeastrum. Master of Science (Genetics), Major Field: Genetics, Department of Genetics.
Thesis Advisor: Associate Professor Saowanee Suputtitada, M.S. 100 pages.

Bulb culture of *Hippeastrum* spp. (Rang Ngern, Rang Thong and Rang Nak) in liquid medium could induce red pigment kept in the vacuole of cells. Separation and characterization of pigment by column chromatography and spectrophotometry indicated it to be anthocyanin-flavonol complex. Pigments were extracted with acetone and processed into a powder form. The pigment powder was evaluated for its toxicity using micronucleus test with mouse peripheral reticulocyte and comet assay with human lymphocyte. After feeding 1 g of pigment/kg of mouse weight for 24, 48, 72 and 96 hours, the number of micronucleated reticulocyte was found to be not significantly different comparing with negative control. Human blood was treated with 0.3, 0.7 and 1.4 mg of pigment/ml of blood for 3 hours to analyze head size, tail length and tail moment of comet cells. It was revealed that the lymphocytes treated with 1.4 mg of Rang Nak pigment/ml of blood showed DNA damage and had significant difference of tail moment comparing with both solvent control and negative control. The rest were not toxic to lymphocytes.

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