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The Cytotoxic Effect of Water Extract of Pereskia bleo (Leaf) on MCF7 Breast Cancer Cell Line and the Identification of p53

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ABSTRACT

Background Breast cancer is the leading cause of cancer related deaths in women in the world. Available ongoing therapy against breast cancer is strenuous and often with side effects. Ethnopharmacology is hoped to be an alternative in finding cures against this devastating disease. *Pereskia bleo* or 'Jarum tujuh bilah' is known in Malaysia as a traditional remedy in curing diabetes, rheumatoid arthritis, hypertension, colon cancer and breast cancer.

Objective: This study is to determine the cytotoxic effects of water extract of *Pereskia bleo* (leaf) on MCF7 breast cancer cell line and to identify the pathway of apoptosis via p53.

Method: The research was conducted in Gadjah Mada University, Yogyakarta. The water extract of the leaves of *Pereskia bleo* are made into specific concentrations and the cytotoxic effects are observed by trypan blue staining and apoptotic pathway determination in determined by immunohistochemistry of p53 with a positive control by tamoxifen.

Results: The water extract of *Pereskia bleo* is cytotoxic with an IC50 of 170.89µg/ml. The pathway of apoptosis is not via p53 pathway as no cells were stained brown.

Conclusion: The water extract of the leaves *Pereskia bleo* is cytotoxic to MCF7 breast cancer cell line with an IC50 of 170.89µg/ml and the pathway of apoptosis is no via p53 pathway.

Keywords: *Pereskia bleo*, MCF7 breast cancer cell line, apoptosis, p53.