LEAVES AQUEOUS EXTRACT AS A CYTOLOGICAL DYE FOR BUCCAL CELL SCREENING

NURIZAN BINTI ZAIMY

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DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work unless otherwise indicated or acknowledged as a referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

Name of Student	:	Nurizan Binti Zaimy
Student I.D. No.	:	2014836374
Program	:	Bachelor of Medical Laboratory Technology (Hons)
Faculty	:	Faculty of Health Science
Thesis	:	Leaves Aqueous Extract As Cytological Dye For Buccal Cell Screening
Signature of Student	:	
Date	:	July 2017

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ABSTRACT

LEAVES AQUEOUS EXTARCT AS A CYTOLOGICAL DYE FOR BUCCAL CELL SCREENING

Background: The efficacies of some natural dye were examined on buccal cell to obtain non-toxic, eco-friendly and cheap stain for cytology.

Methods: Aqueous extract from leaves of *Alternanthera dentata* (purple knight), *Alternanthera ficoidea* (grenadine), *Brassica oleracea* (red cabbage), *Amaranthus dubius* (red spinach) and *Lawsonia inermis* (henna) with and without Aluminium chloride (AlCl3) used to stain buccal cell. Regressive Papanicolaou stain are used as a standard staining procedure with little modification. All dye extraction were test for pH value and spectrophotometer to examine the concentration of the sample. Staining capability of the slide were observe and recorded then statistical analysis were done by using Weighted-Kappa.

Results: Statistical analysis of weighted kappa revealed a fair correlation between staining intensity of leaves aqueous extract dye with Papanicolaou stain while One-way ANNOVA shows $p<0.001$, which means there is difference between leaves aqueous extract with Papanicolaou stain, therefore the dyes are not comparable to the gold standard. All the dye extract were acidic with the pH range of 4.09 to 6.28 and with addition of mordant the range drop between 1.69 to 1.95.

Conclusions: All leaves aqueous extract used in this study has the ability to stain the cell whether for nucleus or cytoplasm, however, the color intensity are not comparable with Papanicolaou stain as the gold standard.

Keywords: Natural dye, Hematoxylin, Leaves aqueous extract, Buccal cell, Malaysia