

UNIVERSITI TEKNOLOGI MARA

**A REVIEW OF PIGMENT TOXICITY ON COSMETIC
CONTACT LENS USING 3-(4,5-DIMETHYLTHIAZOLE-2-YL)-
2,5-DIPHENYL-TETRAZOLIUM BROMIDE TEST (MTT)**

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**Thesis Submitted in Partial Fulfilment of the Requirement for
Bachelor of optometry (hons)
Faculty of health sciences
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JULY 2015

AUTHOR'S DECLARATION

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

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ABSTRACT

The fact that the pigment of cosmetic contact lenses have a direct in contact to the cornea is worrisome. Up-to-date there was no single evaluation that proven the pigment in cosmetic contact lenses caused non-toxic to the eye. 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl-tetrazolium bromide test (MTT) had been widely used as an alternative in vitro toxicity assay. The objectives of this was to systematically review method of toxicity test using 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl-tetrazolium bromide test (MTT) and to analyze effectiveness of 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl-tetrazolium bromide test (MTT) tested on pigment of cosmetic contact lens. The review was done by an exhaustive search on health science databases and internet searching using the keywords related. The studies were then screened for their inclusion and exclusion criteria before extracted and analysis was done. The methodology done resulted in 27 studies selected and being tabulated. According to the review, immortalized human corneal epithelium was the most appropriate cell culture to be used. Both of the solid and liquid physical state of tested substance can be exposed to the culture cell. MTT assay method involved addition, incubation and extraction before colorimetrically measured using spectrophotometer. As a conclusion MTT method is an effective method in determining the toxicity of the pigment in cosmetic contact lens.