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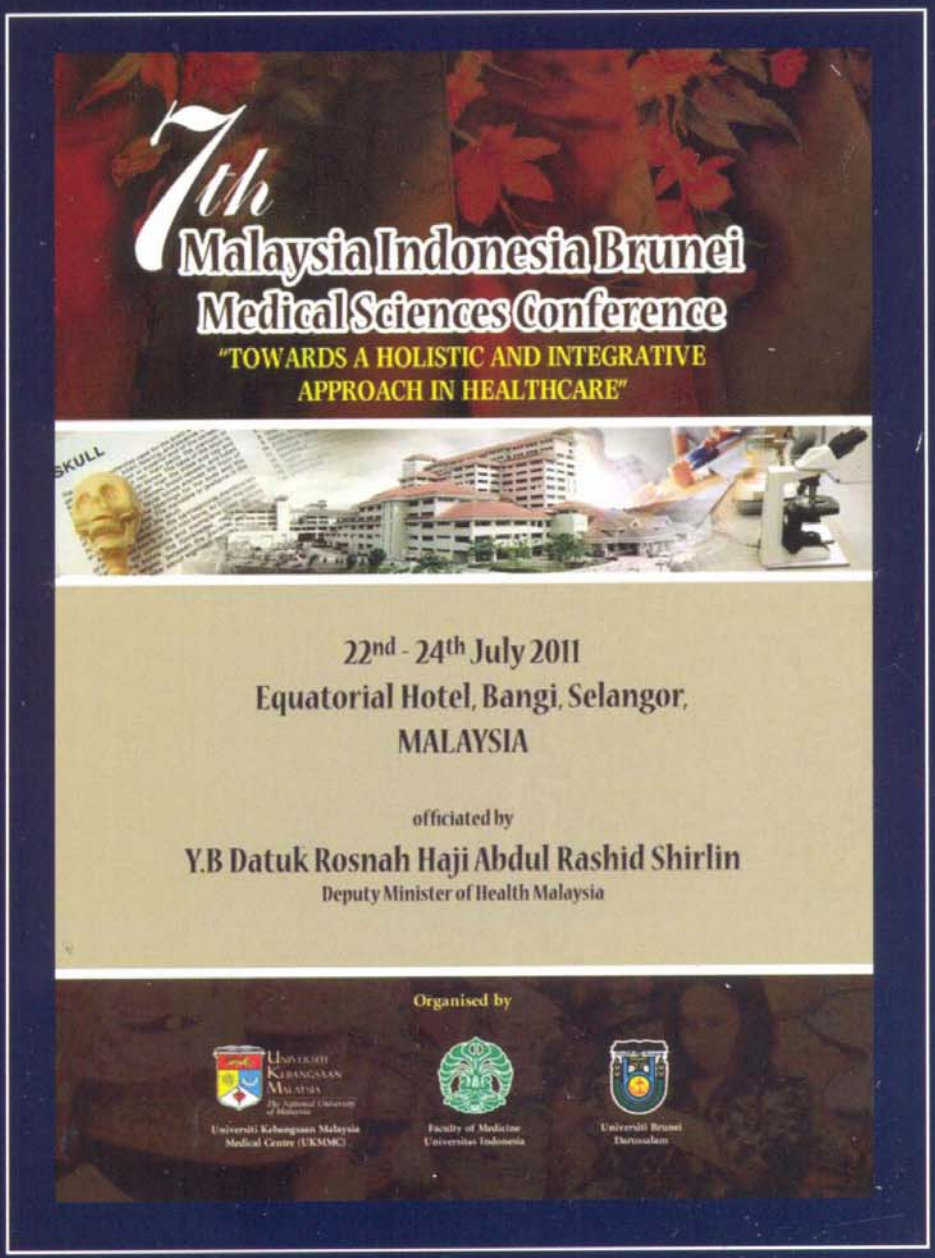

EFFECT OF TOPICAL FORMULATION OF *CENTELLA ASIATICA* EXTRACT AND TOCOTRIENOL RICH FRACTION (TRF) ON WOUND HEALING IN DIABETIC INDUCED RATS

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Background:
Centella asiatica is a traditional herb known to possess anti-oxidant, anti-inflammatory, anti-tumor, anti-genotoxic, anti-proliferative properties and used externally for the rapid healing of wounds. Similarly, vitamin E which is an excellent source of anti-oxidant has also been utilized in wound healing studies. Vitamin E used in this study is obtained from palm oil and contains tocotrienol rich fraction (TRF).

Materials and Methods:
Forty male *Sprague dawley* rats were randomly divided into four groups (n=10): basic gel, CA 0.4% extract gel, TRF 0.5% gel and formulation gel mixture of CA 0.4% extract + TRF 0.5%. Full thickness cutaneous wounds were inflicted with a six mm punch-biopsy needle on the dorsal aspect of the thoracolumbar region. The animals were sacrificed on day ten following wound creation. The rate of wound closure and total protein content were determined and histological analysis was performed using light microscopy.

Results:
It was observed that animals treated with formulation gel mixture of CA 0.4% extract + TRF 0.5% had higher total protein content, faster rate of wound closure, higher proliferation and migration of cells with greater collagen fiber deposition and arrangement within the wound tissues in comparison to other treatment groups. The smaller dimension of scar tissue in the dermis of animals treated with the formulation gel mixture of CA 0.4% extract + TRF 0.5% indicates that the wounds were healed.

Conclusion:
Present study demonstrated the formulation mixture incorporating both CA and TRF exhibited synergistic effect in accelerating the process of wound healing.

Keywords:
Centella asiatica, diabetes mellitus, wound healing, tocotrienol rich fraction