



APPLIED BIOLOGY: BRIDGING BETWEEN
KNOWLEDGE AND INNOVATION



The 14th Symposium of
Malaysian Society of Applied Biology

29th May – 31st May 2016

Swiss-Garden Hotel & Residences Malacca



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TIME	
1600 - 1830	
2000 - 2200	

TIME	
0830 - 0900	
0900 - 0940	
0940 - 1030	
1030 - 1100	
1100 - 1130	
1130 - 1245	
1245 - 1415	
1415 - 1445	

1450 - 1650	M (G)
1700 - 1730	
1930 - 2200	

MEDICAL & HEALTH SCIENCES

P-MHS-01

GANCIDIN W, A POTENTIAL LOW TOXICITY ANTIMALARIAL AGENT ISOLATED FROM AN ENDOPHYTIC *Streptomyces* SUK10

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ABSTRACT

As it resisted against nearly all current drugs, malaria was reported remained as the most threatening human parasitic disease. In line with this, endophytic *Streptomyces* are potential sources for novel bioactive molecules. In this study, prolyl-leucyl-diketopiperazine (C₁₁H₁₈N₂O₂) or Gancidin W (GW) was successfully isolated from *Streptomyces* SUK10 that inhabited in the bark of *Shorea ovalis*. Using four days suppressive test (4DST), this compound was *in-vivo* tested against *Plasmodium berghei* NK65. At 6.25 and 3.125 µg kg⁻¹ body weight (bw), there was a very significant relationship of the ability to inhibit the growth of *P. berghei* NK65 when GW exhibited an inhibition rate of nearly 80% on male ICR strain mice. Comparing GW with dH₂O diluted quinine hydrochloride and 0.9% normal saline as positive and negative controls respectively, 50% of the mice group treated with 3.125 µg kg⁻¹ bw was managed to survive more than eight months post-infection exposure where this survival ranged was exceeded half of the normal mice's life span period. As *in-vivo* toxicity assessment towards selected vital organs and blood enzymes were also investigated, the ALT and AST enzymes level was slightly higher but there was no abnormalities and injuries were found on the tested organs of the mice group treated with GW at this concentration. These findings indicated that GW isolated from *Streptomyces* SUK10 exhibited very low toxicity and is a good candidate as a potential antimalarial agent.



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