

**LAPORAN AKHIR PENYELIDIKAN FUNDAMENTAL UMS
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**PENGLONAN DAN PENJUJUKAN BEBERAPA FRAGMENT
RETROVIRUS ENDOGENUS DARIPADA IKAN MARIN SABAH**

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Abstrak

Sebanyak 78 sampel ikan marin telah diperolehi dari perairan Sabah. Dari jumlah itu, 78 sampel telah diekstrak DNA mereka dengan menggunakan kaedah manual dan kit komersil. Kaedah pengekstrakan DNA genomic secara manual memberikan kuantiti DNA yang tinggi pada 60 hingga 1225 ug/ml DNA per 10mg sampel tisu ikan. Sebaliknya kaedah pemencilan DNA menggunakan kit komersil memberikan nilai antara 25 hingga 230 ug/ml per 10mg sampel tisu ikan. Daripada 78 sampel, 44 sampel melalui penyaringan PCR kali pertama untuk memancing keluar gen transkriptase berbalik dari spesies ikan marin Sabah. Selanjutnya, hanya 20 sampel melalui penyaringan kali kedua dan hanya 8 sampel dikaji lanjut melalui purifikasi DNA. Dari 8 sampel itu, hanya 2 yang berjaya diklonkan dan diujukkan DNA mereka. Dari 2 sampel yang diujukkan DNANYA, hanya 1 sampel iaitu sampel dari ikan Mong yang telah dikenalpasti mempunyai gen transkriptase berbalik di dalam genomnya. Jujukan itu diberi nama RV-Mong dan mempunyai panjang nukleik asid 584 pasangan bes DNA dan 194 asid amino. Tiada kodon penamat diperhatikan pada jujukan DNA RV-Mong dan menunjukkan bahawa retrovirus endogenous ini baru sahaja memasuki genom ikan Mong. Analisa asid amino pada RV-Mong telah mendapati bahawa ia mempunyai padanan yang signifikan dengan retrovirus endogenous dari ikan Puffer (*Tetraodon nigriviridis*) dan ikan Zebra (*Danio rerio*).



Abstract

*Seventy eight samples of marine fish were obtained from East Coast and West Coast Sabah. All of the samples underwent DNA extraction stages by standard manual technique and using commercial kit. Manual DNA genomic extraction technique gave a higher quantity of DNA which is in the range of 60 to 1225 ug/ml per 10 mg of fish tissue as compared to the commercial kit DNA extraction which gave 25 to 230ug/ml per 10mg of fish tissue. From 78 samples, 44 samples underwent first PCR screening to isolate a reverse transcriptase gene from the Sabah marine fish. However, during subsequent second PCR screening, 20 samples were succeeded in obtaining the PCR product. From 20 samples, only 8 samples underwent PCR product purification stage. Eventually, only 2 samples were cloned and sequenced successfully. Only one sample turned out to harbour a reverse transcriptase in its genome. The sample is known as RV-Mong with 584 base pairs and 194 amino acid. No stop codons were observed in this sequence and indicate the endogenous retrovirus had recently being integrated into the Mong fish genome. Subsequent amino acid analyses revealed that RV-Mong had a significant match to endogenous retrovirus from Pufferfish (*Tetraodon nigriviridis*) and Zebrafish (*Danio rerio*).*

