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Characterization of human papillomavirus (HPV) type 18 variant from Padang, Indonesia: Phylogeny and classification based on E6 genes

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Human papillomavirus (HPV) are circular double stranded DNA viruses that are highly prevalent in general population. HPVs can be divided into two groups, mucosal and cutaneous, according to their tissue tropism. Several mucosal HPV types have been identified as the etiological agents for cervical cancer and are termed high-risk (HR) HPV types. Naturally occurring genetic variants of HPV18 are common and have previously been classified into four major lineages; European-Asian (EAS), including the sub lineages European (EUR) and Asian (As), African 1 (AFR1), African 2 (AFR2), and North-American/Asian-American (NA/AA). We aimed to improve the classification of HPV18 variant lineages by using of HPV18-positive cervical samples collected from HPV Research Center, Faculty of Medicine, Andalas University Padang, and coming from various areas in Padang and Pekanbaru, Indonesia. Polymorphism identification has been performed by using the reference sequence NC001357 against 10 isolates of samples derived from cervical cancer patients. Observations on the samples isolates proved Single Nucleotides Polymorphisms (SNPs) on 4-10 samples (40%) while 60% samples did not have mutations. Molecular variations were observed at nucleotide position 197 and 261 and tend missense mutations because amino acid changed from phenyl alanine into serine (F66S) and aspartic acid into alanine (N87K). Analysis of the phylogeny tree showed that four isolates samples had mutations showed a closer genetic relationship to the European variant while the samples without mutation represented genetic relationship to Asian-American variants.

Biography

Marlina has completed his PhD from Faculty of Food Science and Biotechnology at University Putra Malaysia. She is a Professor at Faculty of Pharmacy, Andalas University, Padang, West Sumatera, Indonesia. Her research subject interest includes "Food safety, stem cell and vaccine development".

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