ENTEROBACTERIAL REPETITIVE INTERGENIC CONSENSUS-PCR (ERIC-PCR) ANALYSIS AMONG RAW VEGETABLES ISOLATES OF *Campylobacter jejuni*

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ABSTRACT

A total of 20 (n=20) raw vegetable isolates of *Campylobacter jejuni* were examined for the presence of virulence genes and genetic diversity using enterobacterial repetitive intergenic consensus-polymerase chain reaction (ERIC-PCR) analysis. All *C. jejuni* isolates were obtained from the laboratory of Food Science and Biotechnology, University Putra Malaysia, Serdang, Selangor. When specific PCR amplification were determined, all raw vegetables isolates of *Campylobacter jejuni* contained *cad*F and *ceu*E genes. Whereas, 12 (12/20) isolates were positive *cdt*B and 6 (6/20) were positive *cdt*C. None of the *C. jejuni* isolates was *cdt*A positive. Using ERIC-PCR analysis, all 20 isolates of *C. jejuni* were subtyped and produced 18 ERIC-PCR profiles namely E1 to E18. Dendogram performed from cluster analysis showed the 20 isolates were group into 2 major clusters (cluster I and II) which may suggest the high level of local geographical genetic variation. From this study, the detection of virulence gene among *Campylobacter jejuni* strains isolated from raw vegetables is an evidence that raised concern on treatment of campylobacteriosis.

ABSTRAK

Sejumlah dua puluh (n=20) isolate *Campylobacter jejuni* yang diasingkan daripada sayur-sayuran mentah telah dikaji untuk mengesan gen virulen dan kepelbagaian genetik menggunakan analisis Enterobacterial Repetitive Intergenic Consensus-Polymerase Chain Reaction (ERIC-PCR). Kesemua isolat telah diperolehi dari Makmal Sains Makanan & Bioteknologi, Universiti Putra Malaysia, Serdang, Selangor. Kesemua isolat *Campylobacter jejuni* yang diasingkan daripada sayur-sayuran mentah mengkodkan gen cadF dan ceuE apabila amplifikasi PCR ditentukan. Sementara itu, 12 isolat (12/20) positif gen cdtB dan 6 isolat (6/20) positif gen cdtC. Namun demikian, tiada isolat *Campylobacter jejuni* yang positif bagi gen cdtA. Menggunakan analisis ERIC-PCR, kesemua 20 isolat *C. .jejuni* disubtaipkan dan menghasilkan 18 profil ERIC-PCR yang dinamakan E1 hingga E18. Paparan dendogram daripada analisis kelompok menunjukkan kesemua 20 isolat dikumpulkan kepada 2 kelompok utama (kelompok I dan kelompok II) yang mana mencadangkan paras tinggi variasi genetik di geografi tempatan. Pengesanan gen virulen di antara isolat C. jejuni yang diasingkan daripada sayuran mentah adalah bukti daripada kajian ini untuk meningkatkan kesedaran untuk merawat campylobacteriosis.

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ABBREVIATIONS & SYMBOLS

bp	Base pair
^{o}C	Degree celcius/Centigrade
DNA	Deoxyribonucleic acid
dNTPs	Dinucleotide(s) triphosphate
ds	Double stranded
et al.	Consensus and associates
g	Gram(s)
>	Greater than
H	Hour
Kb	Kilo base pair
µg	Microgram(s)
µl	Microliter(s)
µm	Micrometer(s)
M	Molar
min	Minute
mg	Milligram(s)
mM	Millimole(s)
ml	Milliliter(s)
%	Per cent
Pmol	Per mole
rpm	Round per minute
UV	Ultra violet