

Correlation of between biochemical test

of normal blood and Total Antioxidant Status

©Yong-Won Park¹⁾
Green Cross Labs¹⁾

[Background] This study aims at carrying out general biochemical tests with blood as a part of the human body to see conditions of the human body and functions of internal organs and implementing the total antioxidant status test with the blood to determine the total amount of antioxidant in the body.

[Method & Material] So this study intends to carry out the total antioxidant status test and 26 items of biochemical tests with 100 samples of normal persons to determine the total amount of antioxidant in normal people and its association with items related to functions of each internal organ. Each test was carried out with 100 samples for general health check-ups using chemistry automation systems of Advia 1650 and Hitachi 7180. The statistical program of SPSS Version 12.0 k was employed to draw the following conclusions.

[Result] As for correlation between tests based on the Total antioxidant status, Creatinine, BUN, Uric acid, and Inorganic-

phosphorus for kidney functions showed correlation at 0.727, 0.753, 0.849 and 0.576, respectively, and Total protein, Albumin, Total bilirubin, ALP, AST, ALT, and Gamma glutamyltransferase for liver functions showed correlation at 0.048, -0.005, -0.093, 0.077, -0.063, 0.052, and 0.164, respectively. And Total cholesterol, Triglyceride, HDL-cholesterol, and LDL-cholesterol (measurement value) for lipid system functions showed correlation at 0.018, 0.035, -0.149, and 0.062, respectively; besides, Glucose, HS-CRP, RA factor, Amylase, Total calcium, CK, LDH, Sodium, Potassium, and Chloride showed correlation at 0.022, 0.101, 0.057, 0.541, 0.154, 0.033, 0.157, -0.112, 0.262, and -0.108, respectively.

[Conclusion] Consequently, a kidney function test was strongly correlated with total antioxidant status; normal people saw the amount of antioxidant increased if kidney dysfunction worsened.

The Antimicrobial Resistance and Genotype Detection of

Extended-Spectrum β -Lactamase Producing Enterobacteriaceae Isolated from Chungcheong Area

©Keun-Dol Yook¹⁾, Byoung-Seon Yang²⁾, Jin-Sook Park³⁾

Dept. of Clinical Laboratory Science, Deajeon Health Science College¹⁾, Dept. of Clinical Pathology, Jinju Health College²⁾, Dept. of Biotechnology, College of Life Science and Nano Technology, Hannam University³⁾

Background: The purpose of this study is to investigate the antibiotic susceptibility, the ESBL genotype, and regional difference in occurrence frequency of ESBL producing *Enterobacteriaceae* isolated from the general hospital in Chungcheong region.

Materials and Methods: A total of suspected 126 ESBL isolates collected from June 1 to December 31, 2012 were analyzed by using biochemical methods, and tested for antimicrobial susceptibility according to the clinical and laboratory standards institute (CLSI) by using combination disk test (CDT). This study has used the ten ESBL genotypes, such as TEM, SHV, CTX-M-1, CTX-M-2, CTX-M-8, CTX-M-9, PER-1, VEB, GES, and TLA for multiplex PCR for the analysis. Enterobacterial repetitive intergenic consensus (ERIC) PCR was performed to compare the regional differences among ESBL producing *Enterobacteriaceae*.

Results: Among the ten ESBL genotypes, the most prevalent genotype of *E. coli* was CTX-M-2 (60.5%), and followed by PER-1 (36.8%) and VEB (36.8%), and the most prevalent

genotype of *K. pneumoniae* was VEB (58.7%), and followed by GES (50.0%), CTX-M-1 (37.0%). Majority of ESBL producing isolates possess more than three ESBL genes.

Conclusion: The ESBL genotypes (CTX-M-8, CTX-M-9 and GES) of Chungcheong region have indicated a statistically significant regional differences ($p < 0.01$). To evaluate the genetic similarity of ESBL isolates, 76 *E. coli* isolates and 46 *K. pneumoniae* isolates were further analyzed by ERIC-PCR assay. Five major groups (I-V) of *E. coli* isolates were clustered in Daejeon (I, V), Chungnam (II, IV) and Chungbuk (II, IV). Four major groups (I-IV) of *K. pneumoniae* isolates were clustered in Daejeon (III), Chungnam (III) and Chungbuk (I, II, IV). The ERIC-PCR assay indicated relative groups within geographic locations, but there was no statistical significance.

Keun-Dol Yook Tel. 82-10-5209-9615

Dept. of Clinical Laboratory Science, Deajeon Health Science College