The Pathogen Resources of Three National University Hospital Branches of National Culture Collection for Pathogens of Korea (2008-2012)

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Background: Nationwide collection of pathogens is essential for the infrastructure for the controls of infectious diseases, the advancement of the medical research, and the development of the biotechnology. Center for Disease Control and Prevention, Ministry of Health and Welfare established National Biobank of Korea on April 2008, and support Chonbuk, Gyeongsang, and Kyungpook National University Hospital Branch (CNUH-, GNUH-, and KNUH-) of National Culture Collection for Pathogens (NCCP) of Korea.

Methods: Three branches of NCCP have collected general and special clinical pathogens. The microorganisms were identified by traditional, automated systems and molecular methods. The collected microorganisms have stored at freeze drying and ultra low temperature freezing state and were processed by strict quality control program (ISO 9001:2008). In addition, several items of clinical, epidemiological, and microorganism’s information for each microorganism were collected.

Results: During the period of 5 years, three branches of NCCP have collected 197 species, 8002 strains Gram-negative bacteria accounted for 59.5% of collected pathogens, followed by Gram-positive bacteria (33.1%), fungi (6.7%), and anaerobes (0.6%). The most frequent collected microorganism was Escherichia coli, followed by Staphylococcus aureus, Klebsiella pneumoniae, Acinetobacter baumannii, Pseudomonas aeruginosa, Enterococcus fecium, and Streptococcus pneumoniae. Among yeasts, Candida albicans and Candida parapsilosis were frequently collected.

Conclusions: The collected pathogen resources will be used for a broad spectrum of researches, which will significantly contribute to education, advancement of basic and clinical science of microbiology as well as industrial fields. The pathogen resources are listed in three national university hospitals (CNUH, 063-250-2626, microbiobank@cuh.co.kr; GNUH, 055-750-9256, biobank@gnu.kr; KNUH, 053-200-3581; knuh_nccp@hmail.knu.ac.kr) and could be distributed to the various researchers or institutions.