

Proceeding

47th Anniversary of Universitas YARSI

INTERNATIONAL SEMINAR AND WORKSHOP ON MOLECULAR MEDICINE: FROM BASIC SCIENCE TO CLINICAL CARE

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Proceeding

47th Anniversary of Universitas YARSI

International Seminar and Workshop On Molecular Medicine From Basic Science to Clinical Care

**15-16 April, 2014
Universitas YARSI, Jakarta
INDONESIA**

Proceeding
International Seminar and Workshop on Molecular Medicine
from Basic Science to Clinical Care, 15-16 April 2014.

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Preface

To celebrate the 47th anniversary of Universitas YARSI, we proudly present "The International Seminar and Workshop on Molecular Medicine: From Basic Science to Clinical Care" on 15-16 April 2014.

The molecular techniques such as PCR, Real-Time PCR, ELISA, Sequencing, Next Generation Sequencing (NGS), Blotting, Immunohistochemistry (IHS) have been used to investigate genomics, stem cell, telomere, and herbal medicine research. In molecular research an investigation should be translated from basic science to clinical care. One of the examples of molecular research is Pharmacogenomic, which could translate the basic science research to clinical care, particularly in selecting the proper drug based on individual genetic background.

Pharmacogenomic is the study of population genetics variability that affects the use of drug. In particular, some drugs might be excellent for most people, but might not be effective for some other and even side effect might occur in certain populations.

Another recent advance in science is the exploration of stem cell and their potentials to substitute dead or damaged cells in any tissue of the body. This will most certainly play a pivotal role in initiating new knowledge and techniques to cure disease.

Message

I would like to extend a warm welcome to all the delegates attending the International Seminar and Workshop on Molecular Medicine: from Basic Science to Clinical Care to be held from 15th to 16th April 2014 at YARSI University

It is important that researchers meet up on a regular basis to interact, networking and exchanging ideas and concepts. Only by sharing ideas, we develop new ones that catalyze research advancement.

I also would like to encourage our foreign speakers and participants to take time off from their busy schedule to experience the busy life of Jakarta and its people to make your visit fully memorable.

I wish you an enjoyable and fruitful meeting.

Prof. Dr. Jurnalis Uddin

Chairman of YARSI Foundation

Message

It is with great pleasure that on behalf of the Universitas YARSI I welcome you all to the International seminar and workshop on Molecular Medicine: From Basic Science to Clinical Care. A lot of hard work has gone to provide what I am sure will be a rewarding scientific meeting with some time for essential collaborative discussions at social events.

Universitas YARSI as an institution of higher learning strives to improve its quality with regard to the imparting of competencies pertinent to the fields of science, technology and arts to its students and alumni. Curriculum developments as well as the design of campus ambience and regulations are based on the vision and mission of Universitas YARSI. The vision of Universitas YARSI is to shape Universitas YARSI into an eminent Islamic higher learning institution with exceptional quality and capable to compete in both national and International forum and to be a one of 500 top University in the world at the end of 2020. We have 5 faculties (Law, Economic, Medicine, Psychology and Information Technology) and next April we will celebrate our 47th Anniversary. We also have 5 research priorities including herbal medicine, stem cell, genetic, telomere and e-health.

We hope that your visit will be enjoyable socially as well as scientifically. If you have any questions, don't hesitate to ask any of the local organizing team. We would also appreciate any feedback you might have.

Best wishes to all our visitors,

Susi Endrini, SSi., MSc., Ph.D

Rector of Universitas YARSI

Message

Dear Colleagues and Guests,

Welcome to Jakarta and the International Seminar and Workshop on Molecular Medicine: From Basic Science to Clinical Care. This seminar is held as a part of the celebration of the 47th anniversary of Universitas YARSI. On behalf of the Meeting Organization Committee, I thank all of you for joining us.

The meeting brings together many internationally renowned scientists and young scientists from academia, government and research center working on molecular research in diverse fields including Pharmacogenomics, Stem Cell, Telomere and Herbal Medicine.

Scientific programs included in these 2 days seminar are workshop on basic molecular technique such as primer design, PCR, real-time PCR, application of DNA polymorphisms, stem cell isolation, cryopreservation, telomere isolation as well as extraction of medicinal plant.

Other exciting programs are focus group discussions, which are divided into 4 areas: Pharmacogenomics that includes the 3rd Southeast Asian Pharmacogenomics (SeaPharm) meeting, Telomere, Stem Cell and Herbal Medicine. These discussions provide golden opportunity for researchers to discuss more on international research network and collaborative research. We also provide the opportunity for young researchers to introduce and publish their researches in the parallel session.

We hope that you will enjoy the scientific program as well as your time visiting Jakarta, one of the most populous capital cities in the world that offers exciting life style within its culture diversity.

Thank you for attending the Meeting.

Rika Yuliwulandari, MD, PhD

Meeting Organizing Chair

Committee

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Susi Endrini, MSc., PhD
Prof. Dr. Abdul Salam M. Sofro, PhD, SpKT
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Exploring N-Acetyltransferase 2 (NAT2) gene polymorphisms among population in Kupang using the GoldenGate Genotyping Assay

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Introduction. N-acetyltransferase 2 enzyme, encoded by *NAT2* gene, plays a significant role in the metabolism of anti-tuberculosis drugs isoniazid (INH). Polymorphisms in *NAT2* gene can determine the acetylator status of individual and this status can be classified into rapid, intermediate, or slow acetylator.

Objective. To determine variations in the *NAT2* gene using the GoldenGate Genotyping Assay for VeraCode/BeadXpress among population in Kupang, a region in the Eastern part of Indonesia with high prevalence of tuberculosis.

Materials and Methods. The GoldenGate Genotyping Assay for VeraCode/BeadXpress is a genotyper machine that can detect 48 to 384 single nucleotide polymorphisms. We used a panel of 48 SNP and 7 rs of the most important *NAT2* SNP were proposed. Genomic DNAs of 234 participants were obtained. This study was part of a study to identify genes related to susceptibility to tuberculosis in Kupang, Timor.

Results. Of 234 DNA, 169 met the required concentration for the machine, however, only two of 7 SNP proposed could be detected using this method; i.e. rs1801279 and rs1799930, with the distribution as followed: no variation in rs1801279 while in rs1799930 showed GG, GA and AA were 57%, 35.1% ,7.9%, respectively.

Discussion. *NAT2* gene screening cannot be optimally determined using GoldenGate Genotyping Assay yet, since the polymorphisms in *NAT2* gene are too close to each other and the work is costly. It is worthy noted that in the area with limited resources, cheaper determination of acetylator status is needed since this status is clinically relevant prior to INH therapy to adjust the dose of treatment. We suggest that other methods i.e. sequencing might be more suitable or otherwise cheaper in determining the *NAT2* gene polymorphisms.

Keywords: Acetylator, Kupang,, *NAT2* gene, Tuberculosis

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