



THE 5TH CONGRESS OF
Asian AVA
ASIAN ASSOCIATION OF
VETERINARY ANATOMISTS
BALI-INDONESIA, FEB 11-13 2015



PROCEEDINGS

“The Role of Anatomy in Veterinary Education and Research in Supporting the Achievement of Veterinary Day-one Competencies”

THE 5TH CONGRESS OF ASIAN ASSOCIATION
OF VETERINARY ANATOMISTS (ASIAN AVA)

February 12-13th, 2015
Discovery Kartika Plaza Hotel, Bali, INDONESIA

Organized by:



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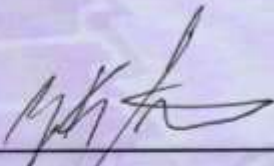
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in Supporting the Achievement of Veterinary Day-one Competencies"*

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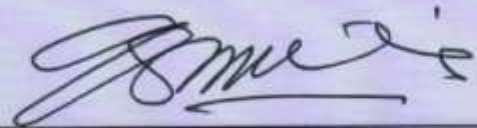
Speaker

Discovery Kartika Plaza Hotel
Kuta, Bali - Indonesia, February 12-13th 2015

certified by



Prof. Masamichi Kurohmaru
President of Asian AVA



Dr. I Ketut Mudite Adnyane
Chairman of the Organizing
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February 12-13th, 2015

Discovery Kartika Plaza Hotel, Bali, INDONESIA

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The 5th Congress of Asian Association of Veterinary Anatomists
2015

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Welcome from President of Asian AVA

Dear Colleagues,



Welcome to the Asian AVA (Asian Association of Veterinary Anatomists) Congress in Bali, Indonesia!

I am very glad to see the members of the Asian AVA from many countries again. In March 2006, the Asian AVA was set up and at the same time, the 1st Congress was held in Tsukuba, Japan. Thereafter, in September 2007, the 2nd Congress was held in Bangkok, Thailand. In November 2009, the 3rd one was in Cheongju in Korea. And, in October 2012, the 4th one was in Phuket, Thailand. Thus, nine years have passed from the 1st Congress, and this is the 5th time that the Asian AVA Congress is held. I strongly believe that the Asian AVA Congress has already become established among veterinary anatomists in Asia.

I would like to sincerely thank all members of the Organizing Committee of the Congress, especially, Vice President of Asian AVA, Prof. Srihadi AGUNGPRIYONO; Chairman of the 5th Asian AVA Congress, Dr. I Ketut Mudite ADNYANE; and Faculty of Veterinary Medicine, Bogor Agricultural University (IPB), for their kind preparation for the Congress.

Bali is the most famous resort place in Asia. We are very happy to attend the Congress held in such an attractive site. Through the Congress, we would like to deepen friendship with each other.

Thank you.

Masamichi KUROHMARU, DVM, Ph.D

President of Asian AVA

Professor of Laboratory of Veterinary Anatomy,
The University of Tokyo, Japan

Welcome from Chairman of the Organizing Committee

Dear Colleagues,

Very Good Morning! Ladies and Gentlemen,



On behalf of the organizing committee, It's my pleasure to welcome you to the 5th Congress of Asian Association of Veterinary Anatomists (Asian AVA) and welcome to Kuta - Bali Indonesia.

In this opportunity, I would like to express my great appreciation to Prof. Masamichi KUROHMARU, the President of Asian AVA, to the Rector of Udayana University and to Prof. Srihadi AGUNGPRIYONO [Vice President of Asian AVA, Dean of Faculty of Veterinary Medicine, Bogor Agricultural University; the President of SEAVSA (South East Asia Veterinary School Association); Head of IVSA (Indonesian Veterinary School Association)] and to Dean of Faculty of Veterinary Medicine - Udayana University for their support and participation on the congress.

The Congress adopts a timely theme:

"The Role of Anatomy in Veterinary Education and Research in Supporting the Achievement of Veterinary Day-one Competencies".

Our technical program is rich and varied with one keynote speaker, seven special lectures and 64 papers for poster sessions.

As a congress chair of 5th Asian AVA 2015, I know that the success of the event depends on the many people who have worked with us in planning and organizing both the technical program and supporting social arrangements.

In particular, we thank the sponsor and organizing committee members (Faculty of Veterinary Medicine - Bogor Agricultural University & Udayana University) who have all worked hard for the details of important aspects of the congress programs.

In closing, I hope that all of you will enjoy the 5th Congress Asian AVA, 2015 and memorable time visiting the beautiful Bali Island.

Thank you. Have a wonderful day.

Sincerely,

Dr. I Ketut Mudite ADNYANE, DVM, MS
Chairman of 5th Congress Asian AVA 2015

Schedule at Glance
The 5th Congress of Asian Association of Veterinary Anatomists (Asian AVA)
February 12-13th 2015
Kharisma Ballroom, Discovery Kartika Plaza Hotel, Kuta, Bali, Indonesia

Thursday, February 12 th , 2015		Speaker
08.00 – 08.30	Registration	
08.30 – 09.00	Opening Ceremony Report: Organizing Committee President of Asian AVA Opening address	Dr. I Ketut Mudite Adnyane Prof. Masamichi Kurohmaru Rector of Udayana University
09.00 – 09.30	Keynote Speech <i>Ex Ova Omnia: The Impact of Modern Embryology on Veterinary Education</i>	Prof. Dr. Dr. Fred Sinowatz (Ludwig Maximilian Universitat Munchen, Germany)
09.30 – 09.45	Photo Session	
09.45 – 10.15	Coffee Break Poster Presentation Session I	
10.15 – 10.35	Special Lecture I <i>Teaching Method and Current Research Interest in Veterinary Anatomy with Special Reference to Bogor Agricultural University</i>	Prof. Tutik Wresdiyati (Bogor Agricultural University, Indonesia)
10.35 – 10.55	Special Lecture II <i>Our Passion for the Morphological Education Ensures the Birth of th Capable Clinical Veterinarians and Morphologist</i>	Prof. Motoki Sasaki (Obihiro University of Agriculture and Veterinary Medicine, Japan)
10.55 – 11.15	Special Lecture III <i>Veterinary Education in the Phillipines</i>	Dr. Emmanuel T Baltazar (Central Mindanao University, Philippines)
11.15 – 11.45	Panel Discussion	
11.45 – 12.15	Poster Presentation Session II	
12.15 – 13.30	Lunch	
13.30 – 13.50	Special Lecture IV <i>Enriching Anatomy Veterinary Education and Research of Indonesia Through Diversity</i>	Dr. Teguh Budipitojo (Gadjah Mada University, Indonesia)
13.50 – 14.10	Special Lecture V <i>Where Are We Gonna Go?</i>	Prof. Eiichi Hondo (Nagoya University, Japan)
14.10 – 14.40	Panel Discussion	
14.40 – 16.00	Coffee Break Poster Presentation Session III	
16.00 – 16.30	Asian AVA Bussiness Meeting (Executive Board and Committee)	Prof. Masamichi Kurohmaru
19.00 – 22.00	Gala Dinner "Indonesian Night"	

Friday, February 13 th , 2015		
08.00 – 09.00	Morning Tea	
09.00 – 09.20	Special Lecture VI <i>Preventive Effects of Natural Supplements Against Alcohol and Nicotine-Induced Teratogenesis</i>	Prof. Sang-Yoon Nam (Chungbuk National University, Korea)
09.20 – 09.40	Special Lecture VII <i>Competency of Diploid Parthenogenesis Embryonic Stem Cell (pESC) for Cell Therapy</i>	Prof. Arief Boediono (Bogor Agricultural University, Indonesia)
09.40 – 10.10	Panel Discussion	
10.10 – 10.40	Introducing Next Asian AVA Congress Closing	Prof. Masamichi Kurohmaru
11.30 – 13.30	Lunch	

Gala Dinner “Indonesian Night”

Thursday, February 12th, 2015

19.00 – 21.30

Venue: Beach Gate Discovery Kartika Plaza Hotel

Dresscode: Casual

Time	Activities	Performer
19.00 – 19.15	Opening	
	Welcome Dance	Dance I
19.15 – 19.30	Welcome address	Prof. Dr. Srihadi Agungpriyono,
	Introduction to Bali	Dean of Faculty of Veterinary Medicine, Udayana University
19.30 – 20.30	Toast “Kampai”	
	Dinner	
	Dance Performance	Dance II
20.30 – 21.30	Angklung Performance by All Participants	Conductor: Mr. Daniyarri Dani and Mr. Edwin Adrian Basuki
	Closing	

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Effect of Rat Bone Marrow Stem Cell Administration to Rats (*Rattus norvegicus*) Using Infertile Model on Oocyte Apoptosis

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INTRODUCTION

Many factors can cause infertility of cattle, and endocrine abnormality is the most frequently found factor. High infertility rate will be of disadvantage because it will decrease the reproductivity and productivity of cattle. Nowadays, the utilization of stem cell to cure various diseases is increasing as Rat Bone Marrow Stem Cell (RBMSC) is able to express genes or certain cells in the body. In infertility case, Rat Bone Marrow Stem Cell administration can improve folliculogenesis process and the quality of oocyte ovulated. The objective of the study is to find out the effect of RBMSC administration on oocyte apoptosis of rats. The significance of the study is a new innovation to utilize stem cells for reproductive disorders.

MATERIALS DAN METHODS

The study was an experimental research with post test only control group design using 32 rats of infertile model randomly divided into 2 groups, that is, Group 1 (Control), a group of rats of infertile model given minimum engle medium (MEM) as RBMSC solvent and Group II (Treatment), a group of rats of infertile model given RBMSC therapy with a dosage of 1.10^7 /rat. Oocyte apoptosis was evaluated using tunnel coloring.

RESULTS AND DISCUSSION

From the results of the statical analysis, the number of apoptotic oocytes of the rats of infertile model treated with Rat Bone Marrow Stem Cell can be seen in the table below.

Table 1. Mean and standard deviation of the number of apoptotic oocytes of the rats of infertility model after given Rat Bone Marrow Stem Cell treatment

Group	(X±SD)	Significance
Control	6.25 ^a ± 3.96	.000
Treatment	4.67 ^b ± 1.42	

The Rat Bone marrow stem cell treatment with a dosage of 1×10^7 / rat was able to improve the process of folliculogenesis and egg quality. It can be seen from the number of oocytes collected, the figures of apoptosis decreased. In addition, the administration of the Rat Bone Marrow Stem Cell could increase the number of eggs ovulated. This treatment was also able to improve the egg quality of the rats of infertile model. In contrast, the infertile group without Rat Bone Marrow Stem Cell therapy the number of ovulated egg cells was reduced, even no oocyte was ovulated, whereas the frequency of apoptosis increased. This proved that administration of Rat Bone Marrow Stem Cell treatment repaired the process folliculogenesis and oocyte competence. The administration of Rat Bone

Marrow Stem Cell to the rats of infertile model could reduce apoptosis than the control group ($p < 0.05$).

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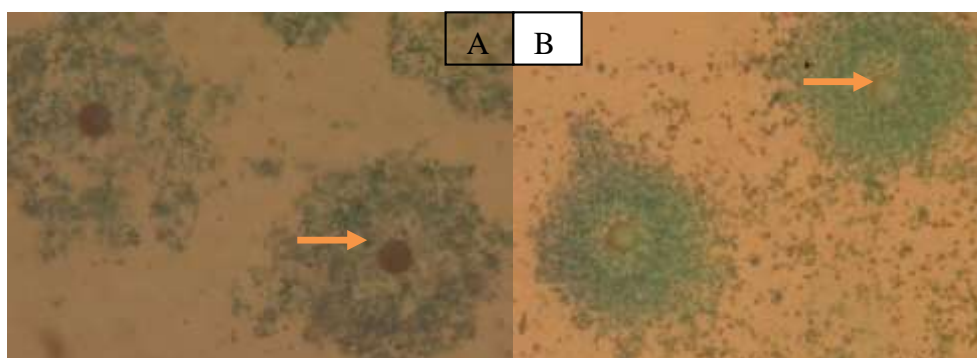


Figure 2. apoptotic oocytes (A) and not apoptotic oocytes (B)

In the control group the low number of ovulated oocytes showed that the endocrine system disruption occurring continuously due to the injection of testosterone would cause disorders to the GnRH, so the LH and FSH were not secreted, thus resulting in disorders to the development, maturation and steroidogenesis in the ovary (Maeda, 2000). In normal condition the secreted FSH stimulated follicle development. The administration of Rat Bone Marrow Stem Cell treatment was able to restore normal FSH secretion, so that it would stimulate the secretion of estrogen. High circulating levels of estrogen would induce sharp increase in LH and normalize the condition of folliculogenesis and maturation in the ovaries so de graff follicles would be ovulated (Noakes, 2001). This could be seen in the treatment group given the Rat Bone Marrow Stem Cell treatment that there was an increasing number of oocytes ovulated and a decrease in the number of oocytes undergoing apoptosis.

CONCLUSION

The Rat Bone Marrow Stem Cell treatment to the rats of infertile model could reduce apoptosis of oocytes.

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