



MEIJI UNIVERSITY

# Meiji-Monash seminar 2017



第366回明治大学国際交流スタッフセミナー特別講義

The 366th Special Lectures for international interchange staff seminar , Meiji University

**Dr. Ishwar S Parhar** Director and Professor,Brain Research Institute School of Medicine and Health Sciences Monash  
University Sunway campus (BRIMS), Malaysia

## Reproductive functions of deep brain photo receptors 10:50~12:30

Light is essentially captured by image-forming photoreceptors in the retina of the eye, converted into electrical signals and sent to specialized brain regions to form images. However, there also exists non-image forming deep brain photoreceptors whose functions are unknown. We have recently cloned a group of deep brain photoreceptors, vertebrate ancient long (VAL)-opsin that have two isoforms (*valopa* and *valopb*), which are daytime-nighttime sensitive. Double-label immunocytochemistry revealed *valopa* and *valopb* are co-expressed in neurons secreting serotonin, GABA or thyrotropin-releasing hormone. Further, using CRISPR/Cas9 genome editing, we generated *valop*-mutant zebrafish and examined the phenotypes of loss-of-function mutants. Interestingly, most F1 eggs or embryos from F0 female *valopa/b* mutants showed either no or only partial chorion elevation. Conversely, most F1 embryos from F0 male *valopa* mutants developed normally but hatched significantly late or never hatched when compared to wild-type embryos. These results suggest that VAL-opsins play an important role in normal fertility via multiple neurochemical systems in the central nervous system. This talk will review recent findings on the cellular identity of deep brain photoreceptors and discuss their implications in reproduction along with neurotransmitter and the kisspeptin systems.

【後援】明治大学国際連携本部

Room 0212 No.4 Building, Ikuta Campus, Meiji University

明治大学 大学院研究科間共通科目 国際系総合研究B

Interdepartmental Courses (Graduate Level) Multilingual Graduate Research B, Meiji University

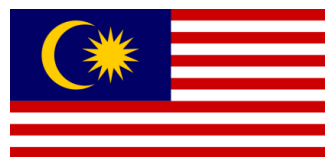
**Dr. Tomoko Soga** Associate Professor, BRIMS, Malaysia

## Effects of Social Isolation on Neuronal Regulation of Reproduction 13:30 ~ 15:10

## Effects of Social Stress on Serotonin System in the Brain 15:20 ~ 17:00

Room 0415 Main Building, Ikuta Campus, Meiji University

# 2<sup>th</sup> June, 2017



★聴講無料/Free Admission

言語：英語 Language: English

講義企画者・問い合わせ/Organizer and contact: Maiko Kawaguchi

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