Module Code	19349024	Course Term
Course Subject Name	**Special Lecture on Advanced Topic of Agriculture 4**	Autumn Semester
Course Tutor	**Michiyasu Yoshikuni**	
Credit	2	Taught Day
Schools	School of Agriculture	Intensive
Taught Year	The 4th year	
Campus	Ito campus	
Subject Area	Lecture	
Course Subject Classification	Common basic subject	Period: 18. Sept. 2017 – 20. Sept. 2017 start at 10:00 in the Fisheries Research Lab.
Course Requirements	None	
Course Requirement (Pre-requisite)	None	

Course Outline

Fundamental understanding of the strategy of finding a new hormone

key words

Study Objectives

In this course, students will learn how to discover a new biologically-active compound. Starfish is one of the excellent model animals to understand the hormonal control of animal reproduction. The course is composed of several experiments; extraction of a spawning-inducing activity from starfish nerve tissues, high-performance liquid chromatography (HPLC) to isolate the activity, and bioassay to estimate biological activities of the isolated specimen.

Course Plan

Outline of Experiments
Purification of the starfish gonadotropic hormone:

Exp. I Selection of the starfish with the high hormonal sensitivity (1st day, morning)
1. Selection of starfishes with high hormonal sensitivity by the ovulation assay

Exp. II Preparation of the nerve extract (1st day, afternoon)
1. Surgical excision of radial nerve tissues
2. Homogenization and ultra-centrifugation to prepare a soluble nerve extract

Exp. III Ultrafiltration of the crude extract (1st day, afternoon)
1. Ultrafiltration of the nerve extract to remove proteinous components

Exp. IV High-Performance Liquid Chromatography (HPLC) (2nd day, mnorning)
1. Separation of the extract by a reversed-phase HPLC system

Exp. V Lyophilization of the HPLC fractions (2nd afternoon ～ 3rd norning)
1. Freeze-drying the HPLC fractions to evaporate the HPLC solvent

Exp. VI Bioassay of the HLLC fractions (3rd day, morning)
1. Estimation of the hormonal activity of the HPLC fractions by an ovulation assay

Exp. VII Hormone injection into starfishes (3rd day, afternoon)
1. Injection of the active fraction into the starfishes selected at the 1st day
2. Observation of the spawning behavior

Course Approaches	Lecture
Textbooks	None
Reference Books	
Study consultation (office hour)	Office Hours: By email or appointment Email: tnaka@agr.kyushu-u.ac.jp, mat@agr.kyushu-u.ac.jp
Exams/Results Evaluation Method	1.Final report or examination (50%) 2. Class participation and attitude (50%)
Others	