

Course Name	Basic Toxicology
Course Number	OBTX113
Credits	1.0 Credits
Adaptation years	1 Year
Class hold days	FallABWed4
Instructor	Yoshito KUMAGAI, Yasuhiro SHINKAI
Overview	Absorption, distribution, metabolism and excretion (ADME) of xenobiotics affect its pharmacological effects and toxicity in the body. In particular, various enzymes (groups) involving in metabolism are associated with for not only detoxification but also metabolic activation of the xenobiotics. In this lecture, students will learn about detoxification and toxicity of acetaminophen as a model of drug.
Remarks	Identical to 02RA160 and 0AVC203. Lectures are conducted in English. Online (Asynchronous)
Course Type	Online lectures (On demand)
Relation to Degree Program Competences	Professional Skill
Course Objectives (Learning Outcomes)	The students will acquire fundamental knowledges of merits and demerits of drugs, basic knowledge of biochemical fates of drug, basic knowledge of biochemistry and molecular biology of cytochrome P450 involved in drug metabolism, and understanding of molecular mechanisms of drug toxicity. 1. The students will be able to explain the efficacy and toxicity dose-response relationship of drugs. 2. The students will be able to explain the molecular mechanisms of detoxification and metabolic activation related to tissue injury of the drug. 3. The students will be able to explain the activation of adaptive response to xenobiotics.
Class Schedule	(1) Introduction -Drug and poison- (2) Stress: Good or bad? (3) Detoxification of xenobiotics (part 1) (4) Detoxification of xenobiotics (part 2) (5) Metabolic activation of xenobiotics (part 1) (6) Metabolic activation of xenobiotics (part 2) (7) Diminished toxicity through activation of adaptive response (part 1) (8) Diminished toxicity through activation of adaptive response (part 2) (9) Self-study for comprehensive understanding of this lectures (part 1) (10) Self-study for comprehensive understanding of this lectures (Part 2)
Grading Philosophy	Students submit a report with answers to the questions given for each lecture and are evaluated based on the contents. Grading Criteria is A+ (Superior), A (Excellent), B (Good), C (Average) and D (Failure).
Course Hours Breakdown and Out-of-Class Learning	For better understanding of the lectures, the students will understand the meaning of the technical terms, and read the references described in the materials distributed at the first introduction.
Textbooks, References, and Supplementary Materials	The materials related to the lecture will be distributed during the first class.
Office Hours and Contact Information	Yoshito KUMAGAI
Other (Behavioral expectations and points to note for students during coursework)	Nothing in particular
Relation to Other Courses	
Teaching Fellow and/or Teaching Assistant	
Course Keywords	Drugs, detoxification, metabolic activation, drug metabolizing enzymes, toxicity, acetaminophen