

# **BIOCHEMICAL TOXICOLOGY, FALL SEMESTER 2016**

## **Section 1: Xenobiotics and reactive oxygen: Threats and defenses**

<b>Date</b>	<b>Time</b>	<b>Place</b>	<b>Lecture</b>	<b>Teacher</b>
Monday, August 29	10 – 12		Presentation of course	J.DePierre, M. Abedi
	13 – 16		Overview of the reaction sequences	R. Morgenstern
Tuesday, August 30	9 – 12		Uptake, distribution and excretion of xenobiotics	G. Johanson-R
	13 – 16		The liver: Basic physiological and pathological principles	S. Ström-R
	afterwards		PLANNING OF PBL PROJECTS	J.DePierre, M. Abedi
Wednesday, August 31	9 - 12		The cytochrome P-450 system	I. Johansson
	PM		WORK WITH PBL PROJECTS + INDEPENDENT STUDY	
Thursday, September 1	9 – 12		Epoxide hydrolase; conjugation with glucuronic acid and sulfate	J. DePierre
	13 - 16		Environmental pollutants	P. Rydberg
Friday, September 2			WORK WITH PBL PROJECTS + INDEPENDENT STUDY	
Monday, September 5	9 - 12		Genetic polymorphism I	I. Johansson
	13 – 16		Glutathione - dependent enzymes	B. Mannervik
Tuesday, September 6	9 - 12		Overview of clinical drug metabolism	J. DePierre
	13 - 16		Genetic polymorphism II + hormonal polymorphism	J. DePierre
Wednesday, September 7	9 - 12		Synergism between xenobiotics I	I.Silins
	13 - 16		Synergism between xenobiotics II	J. DePierre
Thursday, September 8	9-12		WORK WITH PBL PROJECTS + INDEPENDENT STUDY	
Friday, September 9	9 - 12		Formation and characteristics of reactive oxygen species	S. Nobel
	13 – 16		Oxidative stress: Damage to biological molecules versus enzymatic and chemical defenses	R. Morgenstern

Monday, September 12	9 - 12		Induction mechanisms: reactive oxygen	B. Lundgren
	13 – 15		FIRST FOLLOW-UP ON PBL PROJECTS	J.DePierre, M.Abedi
Tuesday, September 13	9-12		Dioxins: Exposure, effects (including up-regulation of xenobiotic metabolism) and risk assessment	E. Vincent
	PM		WORK WITH PBL PROJECTS + INDEPENDENT STUDY	
Wednesday, September 14	9 - 12		Necrosis	Stefan Nobel
	PM		WORK WITH PBL PROJECTS + INDEPENDENT STUDY	
Thursday, September 15			WORK WITH PBL PROJECTS + INDEPENDENT STUDY	
Friday, September 16	9 - 12		FIRST DIAGNOSTIC TEST	J. DePierre, M. Abedi
	PM		WORK WITH PBL PROJECTS + INDEPENDENT STUDY	

## Section 2: Mechanisms giving rise to cellular damage

### **A. Toxic mechanisms**

<b>Date</b>	<b>Time</b>	<b>Place</b>	<b>Lecture</b>	<b>Teacher</b>
Monday, September 19	9 – 12		Apoptosis	S. Nobel
	PM		WORK WITH PBL PROJECTS + INDEPENDENT STUDY	
Tuesday, September 20	9 – 12		Immunotoxicology	M. Abedi-Valugardi
	13 -- 16		Endocrine disrupting chemicals (EDCs)	A.Hanberg
Wednesday, September 21	9 – 12		Metal toxicity	M. Nordberg
	13 - 16		Air pollution particles and manufactured nanoparticles	H. Karlsson
Thursday, September 22	9 - 12		Neurotoxicity	A. Undén-R
	PM		WORK WITH PBL PROJECTS + INDEPENDENT STUDY	

## ***B. Genotoxic mechanisms***

<b>Date</b>	<b>Time</b>	<b>Place</b>	<b>Lecture</b>	<b>Teacher</b>
Friday, September 23	9 - 12		Characteristics of tumors	L. Eriksson
	13 – 16.30		Characteristics of tumors	L. Eriksson
Monday, September 26	9 -- 12		Overview of genetic toxicology	D. Jenssen
	13 - 16		Chemical mechanisms underlying mutagenicity: formation of DNA adducts and consequences	P. Rydberg
Tuesday, September 27	9 - 12		DNA repair and mutagenic mechanisms	D. Jenssen
	13 - 16		Screening methods for carcinogens	D. Jenssen
Wednesday, September 28	9 - 12		Oncogenes and the cancer cell	M. Shoshan
	13 - 16		Chemical carcinogenesis	U. Stenius
Thursday, September 29			WORK WITH PBL PROJECTS + INDEPENDENT STUDY	
Friday, September 30	9 - 12		SECOND DIAGNOSTIC TEST	J.DePierre,M.Abedi
	afterwards		DISTRIBUTION OF THE TAKE-HOME EXAMINATION	J.DePierre,M.Abedi
Wednesday, October 12	16.00, at the latest		RETURN THE TAKE-HOME EXAMINATION – by email or on paper	J.DePierre,M.Abedi

## **Section 3: PBL-projects**

<b>Date</b>	<b>Time</b>	<b>Place</b>	<b>Activity</b>	<b>Teacher</b>
Thursday – Monday, October 13-17			WORK WITH PBL PROJECTS	
Tuesday, October 18	9 --		SECOND FOLLOW-UP ON PBL PROJECTS– group meetings with supervisors, make appointment with each supervisor in advance! FINISH UP WORK ON PBL PROJECTS	J.DePierre,M.Abedi
Wednesday, October 19			FINISH UP WORK ON PBL PROJECTS	
Thursday, October 20	12		TURN IN THE WRITTEN PBL PROJECTS, THEREAFTER READ THE PROJECTS BY THE OTHER GROUPS AND PREPARE FOR ORAL PRESENTATION OF YOUR OWN PROJECT	
Friday, October 21			READ THE PROJECTS BY THE OTHER GROUPS AND PREPARE FOR ORAL PRESENTATION OF YOUR OWN PROJECT	
Monday, October 24	9 – 17		Discussion of the take-home examination PRESENTATION OF PBL PROJECTS	J.DePierre,M.Abedi
Tuesday, October 25	9 – 17		PRESENTATION OF PBL PROJECTS	J.DePierre,M.Abedi
Wednesday, October 26	9 – 17		PRESENTATION OF PBL PROJECTS	J.DePierre,M.Abedi
Thursday, October 27	9 – 12		PRESENTATION OF PBL PROJECTS	J.DePierre,M.Abedi
Friday, October 28	9 -		COURSE EVALUATION + coffee and cake	J.DePierre,M.Abedi