

**Neurokemi med Molekylär Neurobiologi
(Neurochemistry with Molecular Neurobiology)**

2/9 – 1/11, 2024

KN7001

Lärare (Teachers):

ALS	Anna-Lena Ström
AF	Anna Forsby
CB	Christian Broberger
HN	Henrietta Nielsen
ISK	Iskra Pollak Dorocic
MB	Marek Bartosovic
RH	Rebecca Howard

Assistenter (Teaching assistants):

AM	Andriana Mantzafou
LBW	Jose Barcenas Walls
CH	Charlotta Henningson
AW	Rosaline Awoga
LM	Liam Moran

Lokaler (Place):

K438: KÖL lecture room
K447-K441: KÖL lecture room
Magnelisalen: KÖL lecture room
K343, KÖL computer lab
K232-K242: KÖL Lab
M414: Conference room DBB
K317-K321: Conference room DBB

Neurokemi med Molekylär Neurobiologi
28/8 - 27/10, 2023
KN7001

Day	Date	Time	Activity	Teacher	Place
W1					
Mon	2/9	9.00-12.00	Roll call and presentation of the course and course participants (obligatory for all)	ALS	K438
		13.00-15.00	Introduction for students on the master's programme in neurochemistry	ALS	K438
		15.00 -	FIKA and mingle		
Tue	3/9	9.00-12.00	Lecture 1: Neurons and glia cells	ALS	K438
		13.00-17.00	Introduction to labs and exercises (obligatory for all)	ALS	K438
			Start of Neuroanatomy LAB; introduction and handout of assignment (obligatory for all)		
Wed	4/9	9.00-12.00	Lecture 2: Organization of the nervous system	ALS	K438
		13.00-16.00	Neuroanatomy LAB part II, group 1	ALS	K438
		13.00-16.00	Neuroanatomy LAB independent work with part I, group 2-5		
Thu	5/9	9.00-12.00	Neuroanatomy LAB part II, group 2-3	ALS	K433- K439
		9.00-12.00	Neuroanatomy LAB independent work with part I, groups 1, 4-5		
		13.00-16.00	Neuroanatomy LAB part II, group 4-5	ALS	K433- K439
		13.00-16.00	Neuroanatomy LAB independent work with part I, group 1-3		

Fri	6/9	9.00-12.00	Lecture 3: Electrical properties of neurons I	ALS	K438
		13.00-15.00	Lecture 4: Electrical properties of neurons II	ALS	K438
		23.59	Deadline for passing Neuroanatomy LAB part I quiz		Athena
W2					
Mon	9/9	9.00-12.00	Lecture 5: Ion channels I	ALS	K438
		13.00-17.00	MetaNeuron LAB; introduction (obligatory for all)	ALS, AF	K438
Tue	10/9	9.00-12.00	Lecture 6: Techniques to study the electrical properties of neurons	RH	K438
		13-17	MetaNeuron LAB; independent work with assignment (obligatory)		
Wed	11/9	9.00-12.00	Lecture 7: Ion channels II	ALS	K438
		13.00-17.00	MetaNeuron LAB; independent work with assignment (obligatory)		
		23.59	Deadline to submit individual word document with answers to the Metaneuron lab compendium questions		Athena
Thu	12/9	9.00-14.00	MetaNeuron LAB; lab group discussion and each group should prepare a power point presentation together		Optional
		14.00-17.00	Lecture 8: Ion channels III	ALS	K438
		17.00	Deadline to submit group ppt for MetaNeuron LAB		Athena
		17.00	Short test I available in Athena		Athena
Fri	13/9	9.00-12.00	MetaNeuron LAB; group 1 presentation	AF	K433
		9.00-12.00	MetaNeuron LAB; group 2 presentation	ALS	K439
		13.00-16.00	MetaNeuron LAB; group 3	AF	K321

		13.00-16.00	presentation MetaNeuron LAB; group 4 presentation	ALS	K317
W3					
Mon	16/9	9.00-12.00	MetaNeuron LAB; group 5 presentation	ALS	K441
		13.00-17.00	Complete and hand-in short test I (Dugga I)		Athena
Tue	17/9	9.00-12.00	Lecture 9: Release of neurotransmitters	HN	K438
		12.00-17.00	Introduction to data visualization and statistical analysis LAB (obligatory for all) Students watch movie and reflect on questions independently	ALS/HN/ MB/JBW	K438
Wed	18/9	9.00-12.00	Lecture 10: Glutamate and Glutamate receptors	ALS	K438
		13.00-17.00	Data visualization and statistical analysis LAB, group discussions, groups 1-5	ALS/HN/ MB/JBW	K438
Thu	19/9	9.00-12.00	Lecture 11: GABA and GABA receptors	RH	Magneli
		13.00-17.00	Data visualization and statistical analysis LAB; groups 1-3	MB/JBW	K343
Fri	20/9	9.00-13.00	Data visualization and statistical analysis LAB; groups 4-5	MB/JBW	K343
		14.00-17.00	Lecture 12: Acetylcholine and Acetylcholine receptors	ALS	K438
W4					
Mon	23/9	9.00-13.00	Data visualization and statistical analysis LAB, groups 1-3	JBW/MB/ ALS	K343
		13.00-17.00	Data visualization and statistical analysis LAB, groups 4-5	JBW/MB/ ALS	K343
Tue	24/9	9.00-12.00	Calcium LAB, all groups,	AF/ALS/L	K438

		13-17	introduction and hand-out of assignments, obligatory Calcium LAB; independent work with assignment (obligatory)	M	
Wed	25/9	9.00-12.00 13.00-17.00 23.59	Lecture 13: GPCRs and G-proteins Calcium LAB; independent work with assignment (obligatory) Deadline to submit individual word document with answers to the Calcium compendium questions	HN	K438 Athena
Thu	26/9	9.00-12.00 13.00-17.00	Lecture 14: Second messengers I Calcium LAB; work with assignment with your group (obligatory)	HN	Magneli
Fri	27/9	9.00-12.00 13.00-17.00 17.00	Lecture 15: Second messengers II Calcium LAB; work with assignment with your group (obligatory) Deadline to submit group ppt for Calcium LAB	HN Athena	K438
W5					
Mon	30/9	9.00-12.00 9.00-12.00 9.00-12.00 13.00-16.00 13.00-16.00	Calcium LAB; Group 1 (obligatory), Discussion of assignment results Calcium LAB; Group 2 (obligatory), Discussion of assignment results Calcium LAB; Group 3 (obligatory), Discussion of assignment results Calcium LAB; Group 4 (obligatory), Discussion of assignment results Calcium LAB; Group 5 (obligatory), Discussion of assignment results	LM ALS AF LM ALS/AF	K438 K441 K447 K447 K441

Tue	1/10	9.00-12.00	Lecture 16: Receptor kinetics, affinity and efficacy	ALS	K438
		13.00-17.00	Introduction to Receptor binding LAB, all groups (obligatory)	ALS/CH/RA	K438
			Do preparatory quiz for receptor binding lab		Athena
		23.59	Deadline to pass preparatory quiz for the receptor binding lab		Athena
Wed	2/10	9.00-17.00	Receptor binding LAB; Group 1-2 (obligatory)	RA/CH	K232-K242
		9.00-12.00	IP3 inhibition LAB, groups 5 (obligatory)	AM	M414
Thu	3/10	9.00-12.00	Lecture 17; Catecholamines and their receptors	CB	K438
		13.00-17.00	Receptor binding LAB; Group 1-2 (obligatory)	RA/CH	K343
Fri	4/10	9.00-17.00	Receptor binding LAB; Group 3-4 (obligatory)	RA/CH	K232-K242
		13.00-16.00	IP3 inhibition LAB, groups 5 (obligatory)	AM	K447
		23.59	Deadline to pass Calcium lab quiz in Athena		Athena
W6					
Mon	7/10	13.00-16.00	Receptor binding LAB; Group 3-4 (obligatory)	RA/CH	K343
		9.00-12.00	IP3 inhibition LAB, groups 1 (obligatory)	AM	K441
		9.00-12.00	IP3 inhibition LAB, groups 2 (obligatory)	ALS	K447
Tue	8/10	9.00-17.00	Receptor binding LAB; Group 5 (obligatory)	RA/CH	K232-K242
		09.00-12.00	IP3 inhibition LAB, groups 3	AM	K441

		09.00-12.00	(obligatory) IP3 inhibition LAB, groups 4 (obligatory)	ALS	K447
Wed	9/10	9.00-12.00	Lecture 18: Serotonin and serotonin receptors	IPD	K438
		13.00-17.00	Receptor binding LAB; Group 5 (obligatory)	RA/CH	M414
		13.00-16.00	IP3 inhibition LAB, groups 1 (obligatory)	AM	K433
		13.00-16.00	IP3 inhibition LAB, groups 2 (obligatory)	ALS	K439
Thu	10/10	9.00-12.00	Lecture 19: GPCRs and regulation of the electrical properties of neurons summary	ALS	K438
		13.00-16.00	IP3 inhibition LAB, groups 3 (obligatory)	AM	K433
		13.00-16.00	IP3 inhibition LAB, groups 4 (obligatory)	ALS	K439
Fri	11/10	9.00-17.00	Study for short test II		
		17.00	Deadline to hand-in group /team evaluation		Athena
W7					
Mon	14/10	9.30-12.00	Short test II	AM/LM/C H/RW/JB W	K438
		13.00-16.00	Lecture 20; Long-term plasticity	ALS	K438
Tue	15/10	9.00-12.00	Lecture 21: Neurochemical aspects of pain	ALS	K438
		13.00-14.00	Team evaluation discussion, group 1	ALS	K438
		14.00-15.00	Team evaluation discussion, group 2	ALS	K438

		15.00-16.00	Team evaluation discussion, group 3	ALS	K438
Wed	16/10	9.00-12.00	Lecture 22: Neuropharmacology and pathology I – intro and AD/PD	ALS	K438
		13.00-14.00	Team evaluation discussion, group 4	ALS	K438
		14.00-15.00	Team evaluation discussion, group 5	ALS	K438
Thu	17/10	9.00-12.00	Lecture 23: Neuropharmacology and pathology II – MDD and Anxiety	IPD	K438
Fri	18/10		Study for exam		
W8					
Mon	21/10		Study for exam		
	22/10		Study for exam		
Wed	23/10		Study for exam		
Thu	24/10		Study for exam		
Fri	25/10	9.30-14.00	Written exam	AM/LM/C H/RA/JB W	K438
W9					
Mon	28/10	9.30-12.00	Written exam go through (obligatory for all)	ALS	K438
		13.00-17.00	Prepare for literature seminar		
Tue	29/10	9.30-17.00	Prepare for literature seminar		Athena
		17.00	Deadline to submit Abstract to Athena latest 17.00		
Wed	30/10	9.30-16.00	Literature seminar preparation		
Thu	31/10	9.00-17.00	Literature seminars (all day obligatory for all)	ALS	Magneli
Fri	1/11	9.00-17.00	Literature seminars (all day obligatory for all)	ALS	K317- K321

Wed	18/12		Re-exam	AM/LM/C H/RA/JB W	TBA