



Course leader: Anna Överby Wernstedt  
e-mail: anna.overby@umu.se

## Immunochemical techniques – 7,5hp – 5MO108

**Course period:** 2021-01-18-2021-02-17

**Roll call:** Monday, January 18, at 09.00 am, Zoom

**Examination:** 2021-02-17 - 18.00- 22.00, Östra Paviljongen

**Rexamination:** 2021-04-17 - 9.00-13.00, Östra Paviljongen

**Premises:** Lecture hall: recorded or on zoom  
Laboratory experiments: Course laboratory Green lab in building 6L

**Course literature:** Kuby: Immunology, 8:th edition, Punt, Stranford, Jones, Owen. Publisher: H. Freeman & Co Ltd  
Or  
Kuby: Immunology, 7:th edition, Owen, Punt, Stranford. Publisher: H. Freeman & Co Ltd

**Course Leader:** Anna Överby Wernstedt  
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All activities marked in grey in the schedule are **OBLIGATORY!**

### **Teachers and course assistants:**

AÖW: Anna Överby Wernstedt

CU: Constantin Urban

TF: Teresa Frisan

LF: Lars Frängsmyr

ER: Ebba Rosendal

EN: Emma Nilsson

AD: Andy Dernstedt



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Klockan	Må 18/1	Ti 19/1	On 20/1	To 21/1	Fr 22/1
Recorded lectures		Innate immunity (CU)  MHC and T cell activation/adaptive responses (AÖW)		Recombinant ab (EN)  Hypersensitivity (CU)	Transplantation immunology (AÖW)
09.00-09.45	Introduction to course FSR information AÖW (Zoom)	Group work	Immunoglobulins 1 - Structure, biological properties TF (Zoom)	Lab group work for solving lab setup	Supervision lab setup (ER) (Zoom)
10.00-10.45	An overview of the immune system- the cells and their function AÖW (Zoom)		Lab presentation: Problem to solve, setup tips ER (Zoom)		Chat on Teams (ER)
11.00-11.45			Lab group work for solving lab setup		Lab group work for solving lab setup
12.00-12.45					
13.00-13.45	Group work intro EN (Zoom)				
14.00-14.45					

	Må 25/1	Ti 26/1	On 27/1	To 28/1	Fr 29/2
Recorded lectures		Immunological techniques I – flow cytometry  Immunological techniques II	Affinity Measurements - Theory and Practice, BIAcore Technologies LF		
09.00-09.45	Antigens, antigenicity, vaccinology TF (Zoom)	Question time MHC T cells and transplantation (AÖW) (Zoom)	Seminar Lab setup Gr. 1-6 (ER) (Zoom)	Lab day 0  Group 1-3 9,00-10,30	Lab day 1 Harvest, RNA prep Group 1-3 9,00-10,30
10.00-10.45			Seminar Lab setup Gr. 7-12 (ER) (Zoom)	Group 4-6 10,45-12,15	Group 4-6 10,45-12,15
11.00-11.45	Lab group work for solving lab setup		Question time Innate and hypersensitivity (CU) (Zoom)	ER, EN (Green lab)	ER, EN (Green lab)
12.00-12.45		Dead line 12.00 lab protocol uploaded on Cambro!	Group work		
13.00-13.45		Group work			
14.00-14.45					
15.00-15.45					
16.00-16.45					



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	Må 1/2	Ti 2/2	On 3/2	To 4/2	Fr 5/2
08.00-08.45	<b>Lab</b> Flow cytometry day 4  (group schedule – until late!)  AD, ER ( <b>Green lab</b> )		Lab intro (qPCR) ER ( <b>Zoom</b> )		
09.00-09.45		Lab Cytotox analysis (dry lab) 8.30-9.45 AD ( <b>zoom</b> )	Lab qPCR Group 1-3 09.00-10.30	Lab qPCR analysis (ER) ( <b>Zoom</b> )	How to write a scientific paper AÖW ( <b>Zoom</b> )
10.00-10.45		Question time Immunochemical techniques I, II (AÖW) ( <b>Zoom</b> )	Group 4-6 10.45-12.15		
11.00-11.45		Question time Biacore (LF) (Zoom)	ER, EN ( <b>Green lab</b> )		<i>Group work</i>
12.00-12.45		<i>Group work</i>			
13.00-13.45				Intro ELISA ELISA case Dry lab (ER) ( <b>Zoom</b> )	
14.00-14.45					
15.00-15.45					
16.00-16.45					

	Må 8/2	Ti 9/2	On 10/2	To 11/2	Fr 12/2
09.00-09.45	<i>Group work</i>	<i>Group work</i>	Discussion groups -presentation of lab results ER/EN	<i>Watch group work presentations online</i>	Presentation/questions group work Group 1-6 (EN) ( <b>Zoom</b> )
10.00-10.45	<i>Lab report writing</i>	<i>Lab report writing</i>		<i>Lab report writing</i>	<i>Question time recombinant Ab (EN) (Zoom)</i>
11.00-11.45	<i>Self studies</i>	<i>Self studies</i>		<i>Self studies</i>	<i>Lab report writing</i>
12.00-12.45					<i>Self studies</i>
13.00-13.45			<b>Dead line 13.00</b> Presentation movies uploaded on Cambro!		
14.00-14.45					
15.00-15.45					



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Klockan	Må 15/2	Ti 16/2	On 17/2		
09.00-09.45		<i>Lab report writing</i>  <i>Self studies</i>	Examination 9.00-13.00 Östra Paviljongen		
10.00-10.45	Question time AÖW ( <b>A103</b> )				
11.00-11.45	<i>Lab report writing</i>		<b>Dead line lab report Cambro 17.00</b>		
12.00-12.45					
13.00-13.45					
14.00-14.45					
15.00-15.45					