

BMS 514: Cellular and Molecular Immunology (3 credits)

Syllabus

Course Directors: Gary Winslow winslow@wadsworth.org; 473-2795; Tim Sellati (AMC).

Meeting time and location: Tuesday/Thursday 10-11:30; Albany Medical College, MS-227.

Participating Faculty:

Wadsworth Center: Drs. Gary Winslow, David Lawrence, Katherine MacNamara, Jeff Kennedy, Nick Mantis, William Lee

Albany Medical College: Drs. Dennis Metzger, Amy Hahn, Jim Drake, Tim Sellati, D. Harton, B. Sahay, Early, Michelle Lennartz, Dorina Avram, Deborah Fuller

Trudeau Institute: Drs. David Woodland, Jake Kolmeier

Course Description: This is an advanced immunology course that will cover various aspects of the immune response, including innate recognition, immunogenetics, lymphocyte development and function, antigen presentation, lymphocyte signaling, autoimmunity, and immunity to infections. Emphasis is placed on not only on basic principles, but also on understanding the experimentation that led to our knowledge of how the immune system prevents, and in some cases causes, disease.

Learning objectives:

- Develop thorough knowledge of the studies that have led to the development of current immunology concepts and techniques
- Identify the major cellular and tissue components which comprise the immune system
- Demonstrate an understanding of how white blood cells, including lymphocytes, develop from undifferentiated precursors
- Understand the genetic basis of the immune response, including the genetic organization of lymphocyte receptor genes and the generation of the lymphocyte repertoire
- Understand how immune responses by CD4 and CD8 T cells are initiated and regulated

-
- Describe how the immune system is able to eliminate pathogens
 - Describe the major cellular and molecular processes which promote immediate host responses to pathogens and also lead to long-term immunological protection
 - Understand the basis of immunological memory
 - Describe the different means by which vaccines and antibiotics are used to combat infectious disease
 - Be able to discuss how the immune system distinguishes self from non-self
 - Demonstrate a broad knowledge of immunopathologies, including autoimmune diseases and immunodeficiency diseases, and describe the underlying cellular mechanisms or processes

Prerequisite: BMS 506 or equivalent, by permission of course director.

Cellular and Molecular Immunology BMS 514/MD 602

8/20/08

Course organization Fall 2008

Date	Weekday	Lecture #	TOPIC	LECTURER	Institution
8/26/08	Tues	1	Introduction/overview	Sellati/Winslow	AMC
8/28/08	Thurs	2	Cells and organs	MacNamara	WC
9/2/08	Tues	3	Innate Immunity	Harton	AMC
9/4/08	Thurs	4	Inflammation	Sahay	AMC
9/9/08	Tues	5	Phagocytosis	Lennartz	AMC
9/11/08	Thurs	6	NK cells and receptors	Hahn	AMC
9/16/08	Tues	7	Cell trafficking/ Chemokines	Kohlmeier	TI
9/18/08	Thurs	8	Dendritic cells	Fuller	AMC
9/23/08	Tues		Exam lectures 1-7		
9/25/08	Thurs	9	MHC genes/immunogenetics	Winslow	WC
9/30/08	Tues		classes suspended		
10/2/08	Thurs	10	MHC restriction and control of immunity	Early	AMC
10/7/08	Tues	11	Antigen processing	Drake	AMC
10/9/08	Thurs		classes suspended		
10/14/08	Tues		BMS conference		
10/16/08	Thurs	12	Early lymphocyte development	Avram	AMC
10/21/08	Tues		NYIC meeting		
10/23/08	Thurs	13	Antibody structure and diversity	Drake	AMC
10/28/08	Tues	14	T cell receptors	Winslow	WC
10/30/08	Thurs	15	Lymphocyte Signaling	Lee	WC
11/4/08	Tues		Exam lectures 8-14		
11/6/08	Thurs	16	CD4 T cell function	Avram	AMC
11/11/08	Tues	17	Cytokines	Lawrence	WC
11/13/08	Thurs	18	Lymphocyte-mediated cytotoxicity	Kennedy	WC
11/18/08	Tues	19	Immunological memory	Woodland	TI
11/20/08	Thurs	20	Tolerance, Tregs, autoimmunity	Sellati	AMC
11/25/08	Tues	21	Humoral Immunity	Metzger	AMC
11/27/08	Thurs		classes suspended		
12/2/08	Tues	22	Vaccines	Kennedy	WC
12/4/08	Tues	23	Mucosal immunity	Mantis	WC
12/11/04	Thurs		Exam lectures 15-23		

Location Albany Medical College MS-227
 Time 10:00-11:30 (exams 10-noon)
 Grading Three 2 hr exams
 Director Gary Winslow 473-2795
 Co-director Tim Sellati
 Text Immunobiology, Janeway et al. 7th ed.
 (recommended)

