



Full Syllabus



Course Title	
Introduction to Inflammatory Mechanisms in brain degenerative diseases	
Lecturer	
Prof. Dan Frenkel Prof. Dinorah Friedmann-Morvinski	
Semester	
second	
Course requirements	
Recommended immunology and introduction to neurobiology	
Final grade components	
Exam , there will be an optional for Bonus points that will be explained in class	
Course schedule	
Class no. / Date	Subject and Requirements (assignments, reading materials, tasks, etc.)
1	Key Players I: Resident brain cells – microglia, astrocyte, and oligodendrocyte, Blood Brain Barrier
2	Key Players II : Peripheral immune cells and penetration to the brain.
3	Brain tumors interaction with immune cells- I
4	Brain tumors interaction with immune cells- II
5	Immune therapeutic approaches in brain tumors
6	Autoimmune disease – Multiple Sclerosis
7	Pathogen infiltration – Viral infection Blood vessels injuries – Head injury and stroke
8	Brain degenerative diseases – ALS
9	Brain degenerative diseases – Alzheimer’s disease
10	Brain degenerative diseases - Parkinson’s Disease and Huntington’s disease
11	Immunotherapeutic Application in Neurological Diseases I: Anti-inflammatory Drugs in Neurological Diseases
12	Immunotherapeutic Application in Neurological Diseases II:



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	Can we develop vaccine against Neurological Diseases?
13	Immunotherapeutic Application in Neurological Diseases III: Therapeutic application in animal model and clinical trials
Required course reading	
None	
Optional course reading	
<ol style="list-style-type: none"> 1. Neuroglia , Edited by: Helmut Kettenmann and Bruce R. Ransom 2. Papers - Will be cited for each lecture 	
Comments	
<p>The official language of the class is Hebrew</p> <p>The course will describe the different types of glia cells in the central nervous system and their interaction with neurons in health and disease. Specific emphasize will be given to the interaction between glia cells to peripheral immune cells during neuro-inflammation. The course will describe the cellular and molecular basis of different brain diseases such as: Viral infection, Trauma, Cancer , stroke, Alzheimer's disease, ALS, Parkinson's disease, Huntington's disease and multiple sclerosis. The importance of glia cells in healing processes in the central nervous system and in neurogenesis will be discussed. During the course we will discuss the use of anti-inflammatory treatments in neurodegenerative diseases and the development of vaccine approaches for neurodegenerative diseases.</p>	