The Hebrew University of Jerusalem

Syllabus

Gene Therapy - 94905

Last update 29-07-2021

HU Credits: 4

Degree/Cycle: 2nd degree (Master)

Responsible Department: Bio-Medical Sciences

Academic year: 0

Semester: 2nd Semester

Teaching Languages: Hebrew

Campus: Ein Karem

Course/Module Coordinator: Prof Eithan Galun

Coordinator Email: EithanG@hadassah.org.il

Coordinator Office Hours: By appointment

Teaching Staff:

Prof Eithan Galun,
Prof Eylon Yavin,
Prof Michal Lotem,
Prof Beni Reubi,
Dr. Jonathan Cohen,
Prof Ronen Beeri,
Prof Yechezkel Barenholz,
Eddie Aronovich,
Ms. Dayana Yaish

Course/Module description:

This course integrates lectures given by experts from gene therapy field, with seminars given by the students. The course focuses on understanding the meaning of gene therapy and its progression over time.

Course/Module aims:

1. To provide knowledge about viral and non-viral systems used in gene therapy and discuss their advantages and challenges.
2. To discuss the latest research developments in gene therapy.

Learning outcomes - On successful completion of this module, students should be able to:

1.Characterize the latest topics in gene therapy.
2.Defined the reasons to use gene therapy in different diseases.
3.Compare between gene therapies systems to provide the best treatment.
4.Criticize studies in gene therapy.
5.Recommend ideas to overcome challenges in gene therapy systems.
6.Independently follow studies in gene therapy.

Attendance requirements(%):

100%

Teaching arrangement and method of instruction: Lecture and seminar

Course/Module Content:

1.The use of AAV in gene therapy
2.The use of Adenovirus in gene therapy

3.Non-viral vectors
4.Retrovirus in gene therapy
5.CAR and editing
6.Immunotherapy in cancer
7.DNA vaccination
8.RNAi in gene therapy
9.The use of stem cells in gene therapy
10.Antisense Oligonucleotides
11.Liver diseases
12.Eye diseases
13.Ethics in gene therapy
***The list of topic can be changed, in order to expose students to the most recent developments in gene therapy.*

Required Reading:
Will be provided during the course.

Additional Reading Material:
Will be provided during the course.

Grading Scheme:

Additional information:
Course site:
www.moodle.huji.ac.il
Academic prerequisites: molecular biology course