

UNIVERSITY COLLEGE LONDON

University of London

EXAMINATION FOR INTERNAL STUDENTS

For the following qualifications :-

B.Sc. B.Sc. (Intercal) M.Sci.

Immunology C306: Immunobiology

COURSE CODE : **IMMNC306**

UNIT VALUE : **0.50**

DATE : **30-APR-02**

TIME : **10.00**

TIME ALLOWED : **3 hours**

C306 IMMUNOBIOLOGY

Candidates must answer **Sections A, B and C**. Please answer each section in a separate book.

The fraction of the total marks allocated to each section is as follows:

Section A: 60/180
(**essay**, 1 out of 4)

Section B: 60/180
(**short answers**, 3 out of 6)

Section C: 60/180
(choose **ONE** paper from this section)

TURN OVER

SECTION A

Answer **ONE** question in this section.

1. Discuss the ways the immune system becomes tolerant to self.
2. Outline the main features of lymph node anatomy, and discuss the way this contributes to the function of the adaptive immune system.
3. Discuss the major similarities and differences between the recognition of antigen by antibody and the T cell receptor.
4. The immune response compromises between the need to maximise protection against infection and the need to minimise damage to the host. Discuss.

SECTION B

Write short notes on **THREE** of the following:

1. The neutrophil.
2. Signal transduction via the T cell receptor.
3. The immune response to HIV.
4. Dendritic cells.
5. Tumour antigens.
6. The relationship between immunocompetence and exaggerated male sexual ornamentation (e.g. the peacock's tail).

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SECTION C

Chose **ONE** of the two papers attached* and a) write an abstract which outlines the major findings of the paper, and b) discuss what important further questions this paper raises, and outline briefly the type of experiments you might design to examine these questions further.

a) and b) carry equal marks.

NOTE :

1. **Interleukin 15 skews monocyte differentiation into dendritic cells with features of Langerhans cells.**

The following abbreviations are not explained in the text:

NK – natural killer cells

GM-CSF – granulocyte-macrophage colony stimulating factor

IL – interleukin

LN : lymph nodes; Fas-comp : Fas competitor.

The Methods section, and all the references have NOT been included.

NOTE: Figures 1A, 1C and 1F have been omitted for the sake of brevity.

2. **Requirement for the chemokine receptor CCR6 in allergic pulmonary inflammation.**

Abbreviations not explained in text :

Th – T helper

CCR – CC chemokine receptor (CC denotes a class of chemokine).

The Methods section, and all the references have NOT been included.

*

Extracts from the following articles were appended to the paper. For reasons of copyright, the papers cannot be reproduced here, but can be traced from these references.

Mohamadzadeh, M. et al (2001). "Interleukin 15 skews monocyte differentiation into dendritic cells with features of Langerhans cells". *Journal of Experimental Medicine* **194**(7): 1013-1019.

Lukacs, N.W. et al (2001). "Requirement for the chemokine receptor CCR6 in allergic pulmonary inflammation". *Journal of Experimental Medicine* **194**(4): 551-555.