Libyan International Medical University
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Second Year Block IV

Antigenicity

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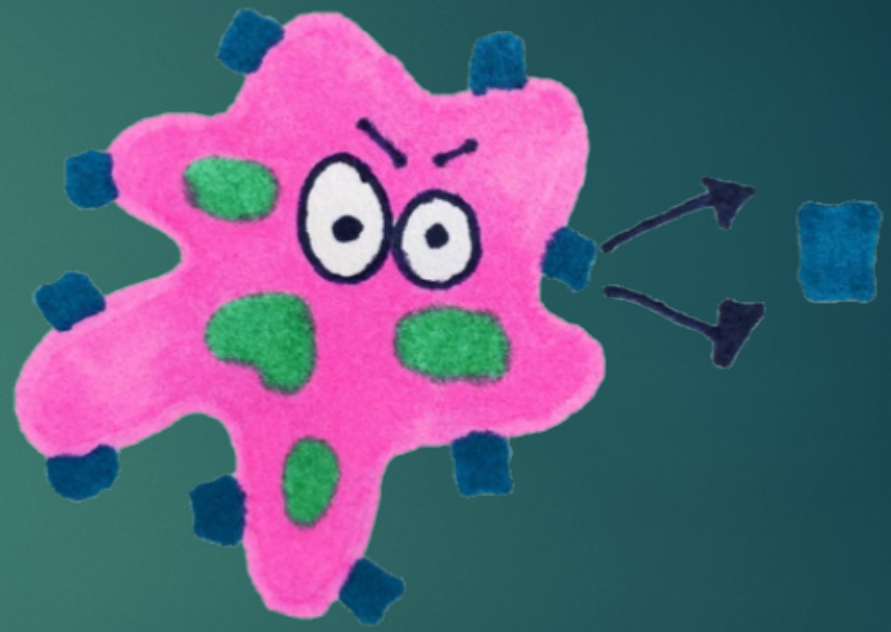
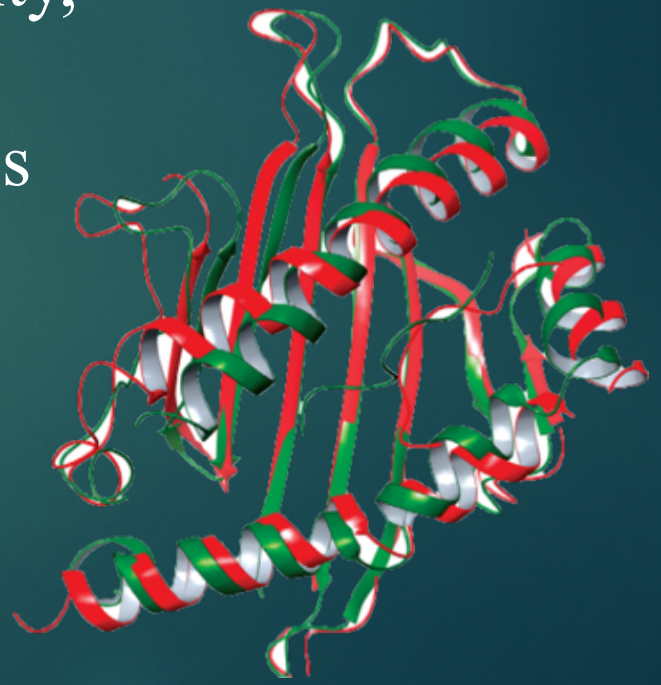
ILOs:

- Define antigens
- List types of antigens
- List types of haptens
- Describe the determinants of antigenicity



Define antigens

Antigens (antibody generators) are the substances that can stimulate an immune response and, given the opportunity, react specifically by binding with the effector molecules (antibodies) and effector cells (lymphocytes)



List types of antigens

Based on the ability of antigens to carry out these two functions, they may be classified into different type :

- complete antigen Complete antigen is able to induce antibody formation and produce a specific and observable reaction with the antibody so produced

- Haptens (incomplete immunogen) Haptens are low-molecular- weight molecules which cannot induce an immune response when injected by themselves but can do so when covalently coupled to a large protein molecyle called the carrier molecule. Example: One example of a hapten is penicillin. By itself, penicillin is not antigenic.

List types of haptens

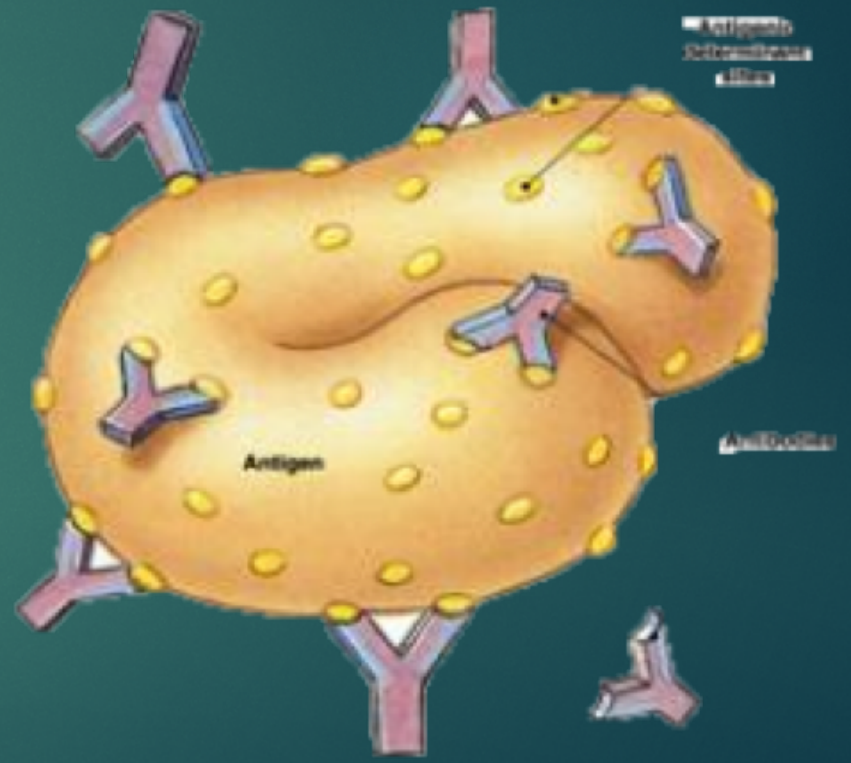
Haptens may be simple or complex:

- ***Simple haptens***
- ***Complex haptens***

Describe the determinants of antigenicity

A number of properties have been identified which make a substance antigenic but the exact basis of antigenicity is still not clear

1. **Size**
2. **chemical nature**
3. **Foreignness**
4. **susceptibility to tissue enzymes**
5. **antigenic specificity**
6. **species specificities**
7. **Isospecificities**
8. **Autospecificity**
9. **Organ specificity**
10. **Heterogenetic (Heterophile) specificity**



Summary

- Antigens (antibody generators) are the substances that can stimulate an immune response
- There are two types of Haptens: *Simple haptens & Complex haptens*

Reference

- surinder kumar (2016) *essentials of mircobiology*. [Online]. Available from: http://www.ghbook.ir/index.php?name=&option=com_dbook&task=readonline&book_id=13650&page=73&chkhashk=ED9C9491B4&Itemid=218&lang=fa&tmpl=component.


thank
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