

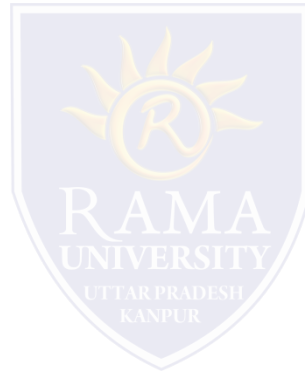


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FACULTY OF MEDICAL SCIENCES

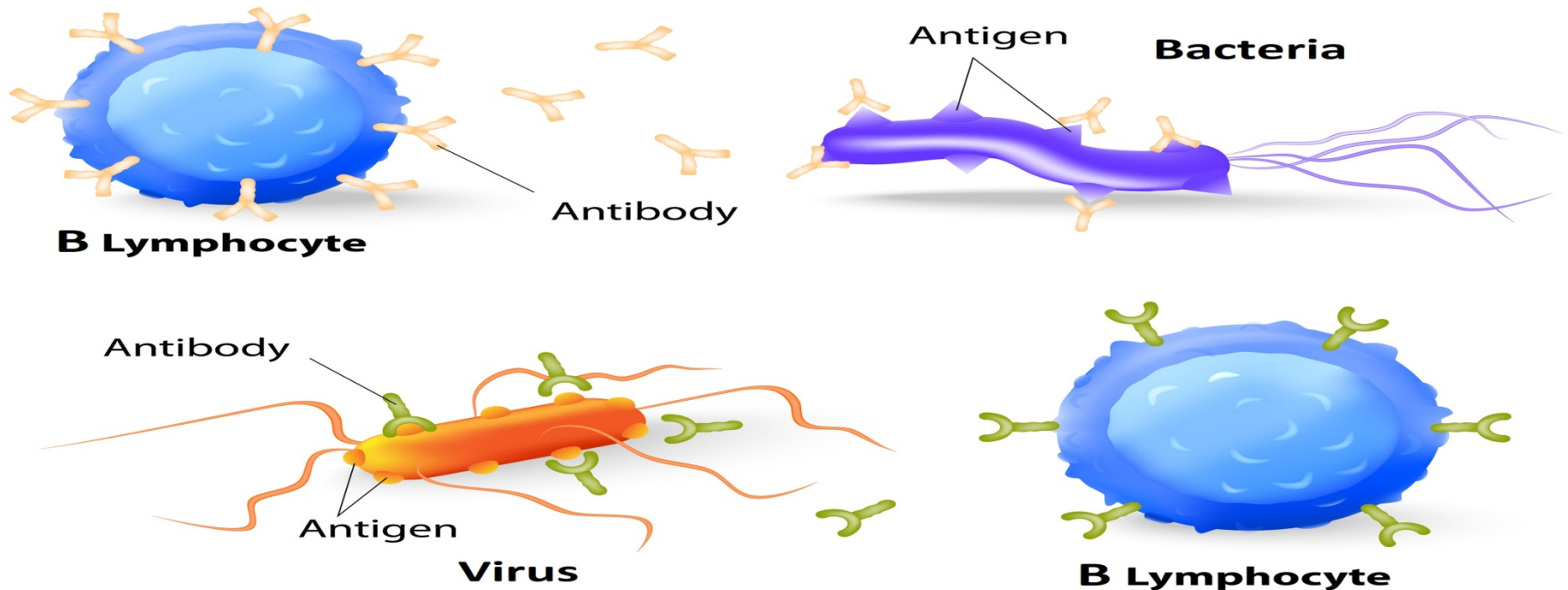
**UNIT-I**  
**Topic:- Humoral immunity.**



# Humoral Immunity

- Results in production of proteins called “immunoglobulin's” or “antibodies”.
- Body exposed to “foreign” material termed “antigen” which may be harmful to body: virus, bacteria, etc.
- Antigen has by passed other protective mechanisms, that is, first and second line of defense.

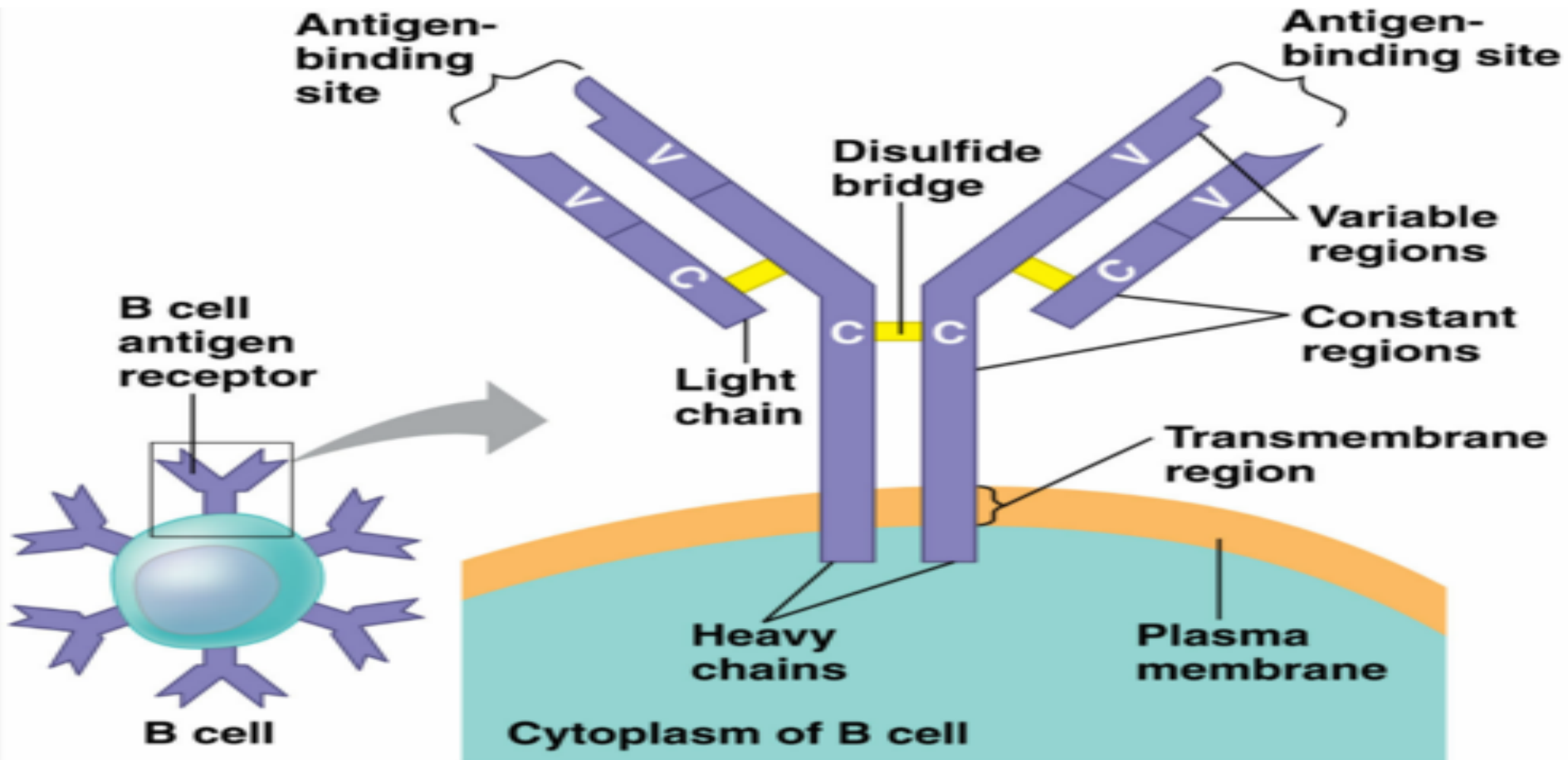
## HUMORAL IMMUNITY



# B Cell Receptors for Antigens

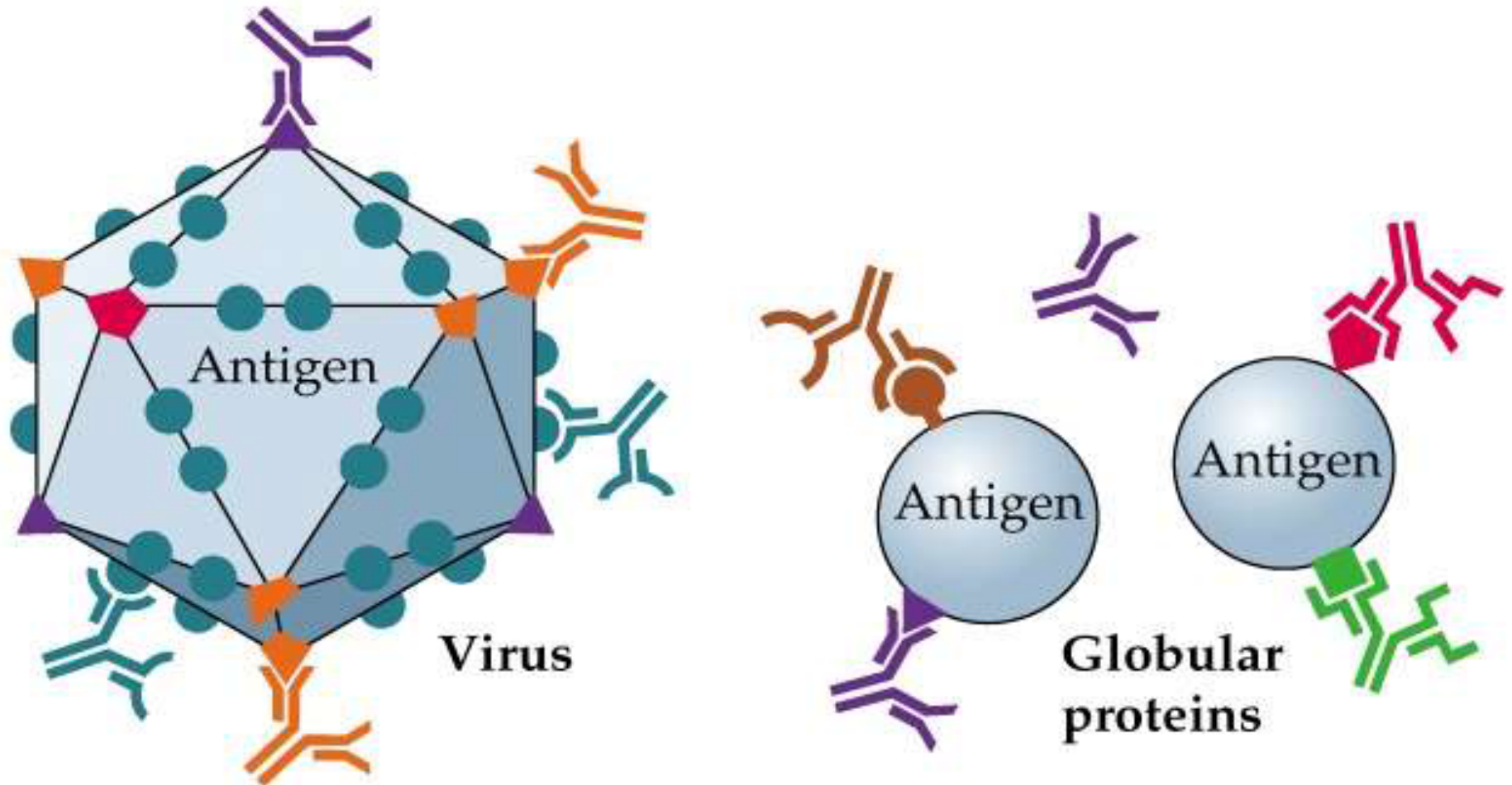
B cell receptors

- Bind to specific, intact antigens
- Are often called membrane antibodies or membrane immunoglobulin's



## Antibodies bond to antigenic determinants:

Antigenic determinants are portions of the antigen



# THE PRIMARY HUMORAL IMMUNE RESPONSE

➤ Immune response initially produces IgM antibodies then switches to IgG antibodies

Question:

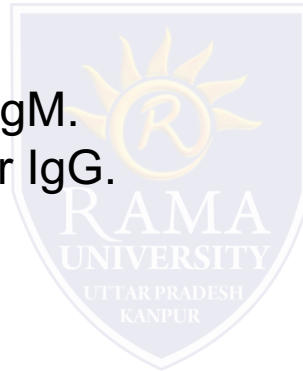
Why switch from IgM to IgG?

Answer:

- Limited effector mechanisms for IgM.
- Range of effector mechanisms for IgG.

Mechanism:

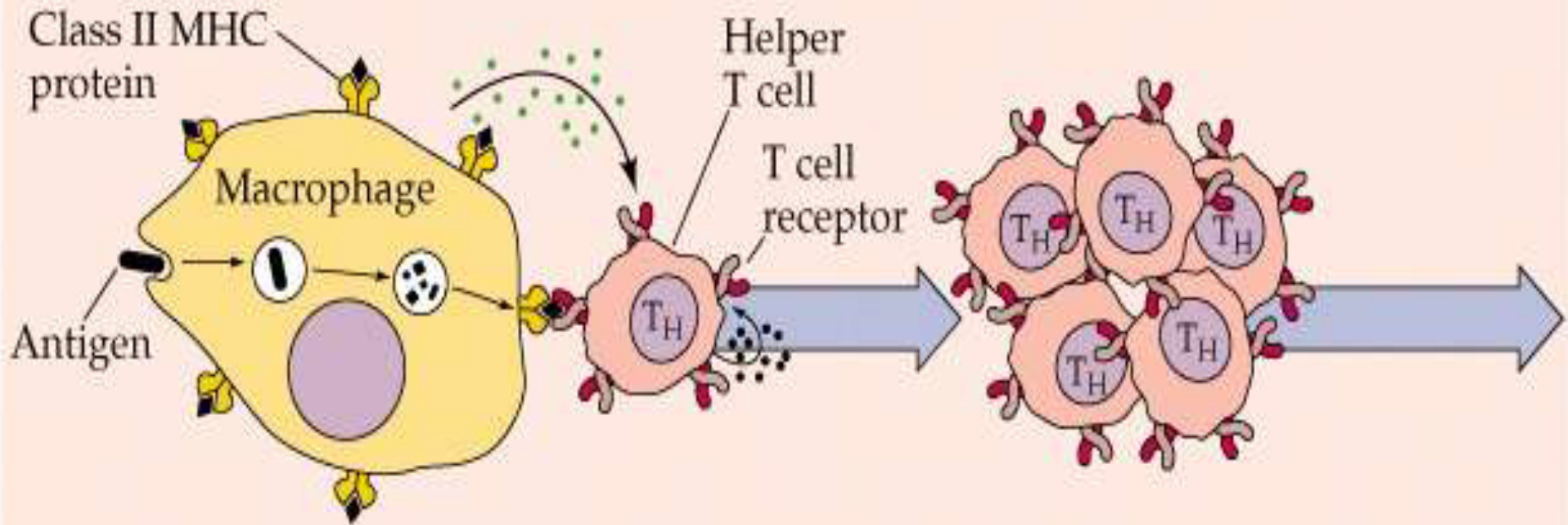
Isotope or class switching.



# Humoral (antibody-mediated) Immunity

## HUMORAL RESPONSE

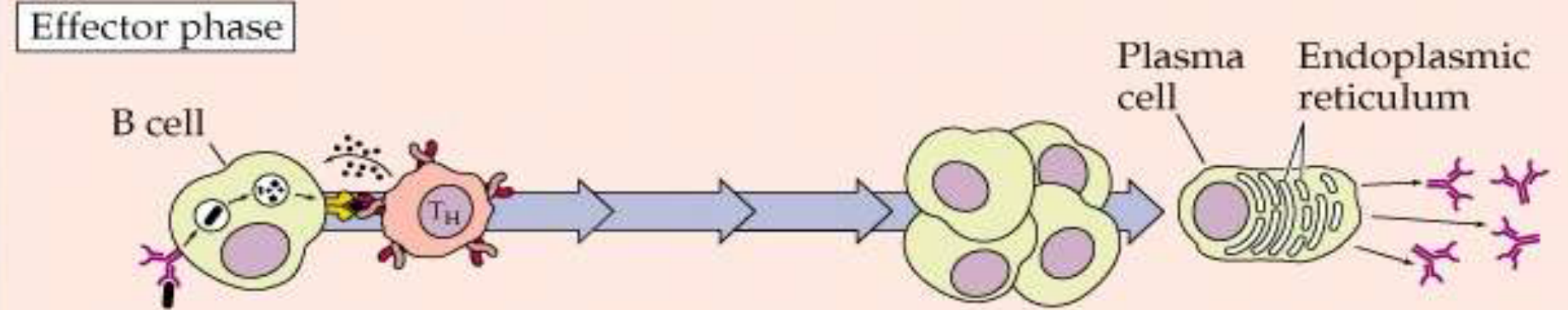
Activation phase



# ISOTYPE OR CLASS SWITCHING

- Process by which B cell changes class of IG produced while preserving antigenic Specificity.
- Involves somatic recombination which attaches different heavy chain constant region to variable region occurs only during active immune response.
- Mechanisms involves recombination between switch sequences (regions)

## HUMORAL RESPONSE





# Humoral immunity

