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### Diploma in Pharmacy 1<sup>st</sup> Year Human Anatomy & Physiology Experiment

### To determine blood group of given sample

### Aim:

To determine blood group of given sample

# **Reference**:

Dr. Gupta G.D , Dr. Sharma Shailesh , Dr. Sharma Rahul Kumar , "Practical Manual of Human Anatomy and Physiology" Published by Nirali Prakashan , Pg.No 57 - 60

# **Requirement :**

Porcelain tile, blood, Antisera A, Antisera B, Anti-D sera.

# **Theory:**

- The surfaces of erythrocytes contain a genetically determine assortment of antigens composed of glycoproteins and glycolipids.
- These antigens, called agglutinogens, occur in characteristic combinations. Based on the presence or absence of various antigens, blood is categorized into different blood groups. Within a given blood group, there may be two or more different blood types.
- There are at least 24 blood groups and more than 100 antigens that can be detected on the surface of red blood cells.

### Two major blood groups are ABO and Rh.

ABO Blood Group: The ABO blood group is based on two glycolipid antigens called A and B.

A person

• who's RBCs display only antigen A has type A blood.



- Those who have only antigen B are type B.
- Individuals who have both A and B antigens are type AB
- Those who have neither antigen A nor B are type O.

Blood plasma usually contains antibodies called agglutinins that react with the A or B antigens if the two are mixed. These are the anti-A antibody, which reacts with antigen A, and the anti-B antibody, which reacts with antigen B.

### Please Note Write on Left side of book page in plane page

Circle No.	Antigen Types	Reaction	Inference
1	Antigen 'A'	Agglutination	'A' group present
		No Agglutination	'A' group Not present
2	Antigen 'B'	Agglutination	'B' group present
		No Agglutination	'B' group Not present
3	Antigen 'D'	Agglutination	'Rh' Positive
		No Agglutination	'Rh' Negative

If Agglutination present in both circles o1 and o2 then blood group- 'AB' If Agglutination absent in both circles o1 and o2 then blood group- 'O'

# **BLOOD GROUP DETERMINATION**



Final Result- The Blood Group is B+ (B Positive)



# **Procedure:**

- 1. Take a clean and dry porcelain tile and put a drop of Antisera A, Antisera B and Anti-D sera respectively.
- 2. Add one drop of blood to each and mix well. Wait for a minute and observe agglutination.
- 3. If there is agglutination, it is confirmed under microscope.
- 4. If agglutination is present in anti-A, then blood belongs to group A.
- 5. If agglutination is present in anti-B, then blood belongs to B blood group.
- 6. If agglutination is present in both, then blood belongs to AB blood group.
- 7. If agglutination is absent in both, and then blood belongs to O blood group.
- 8. If agglutination is presented in anti-D, then blood is Rh +ve, otherwise Rh -ve.

**Result:** The blood group of given sample is B+ found

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