

Blood and Blood groups(血和血型)



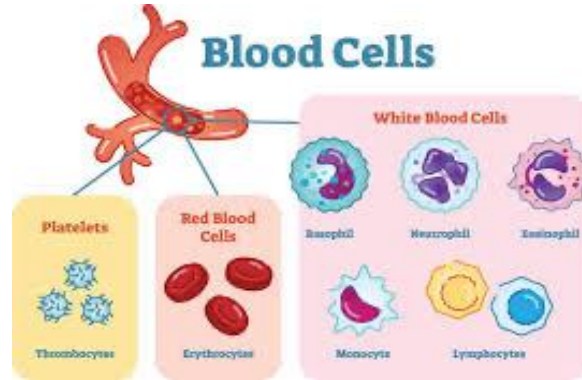
Introduction : What does blood contain?

- Major components of blood: red blood cells, white blood cells and blood platelets in plasma
- Blood type is identified by antibodies and antigens
- Four blood types defined by ABO system

Property of different cells:

- 1) red blood cells
 - made in response of hormone erythropoietin released by kidney due to the low concentration of oxygen in blood
 - functions:
 - bind oxygen to haemoglobin, thus carrying oxygen to tissues from lungs
 - carry carbon dioxide away from tissue and towards lungs
- 2) white blood cells
 - formed in bone marrow and released to blood
 - there are five types of white blood cells: neutrophils, basophils, eosinophils, monocytes and lymphocytes
 - each perform different functions
 - functions:
 - fight infections in the body such as viral, fungal, parasitic and bacterial
 - fight and remove cancerous cells
 - remove dead cells from the body

- 3) blood platelets
- small colorless fragments in blood
 - formed in bone marrow
 - functions :
 - stop and prevent bleeding



Four blood groups : A, B AB, O

- 1) blood group A:
 - has A antigens on the red blood cells with anti-B antigens in the plasma
- 2) blood group B
 - has B antigens with anti-A antibodies in the plasma
- 3) blood group O
 - has no antigens, but both anti-A and anti-B antibodies in the plasma
- 4) blood group AB
 - has both A and B antigens but no antibodies

	A 組	B 組	AB 組	O 組
紅血球 細胞型態				
抗體 存在	 B 抗體	 A 抗體	無	 A 與 B 抗體
抗原 存在	A 抗原	B 抗原	A 與 B 抗原	無

Blood donation

血型相容表

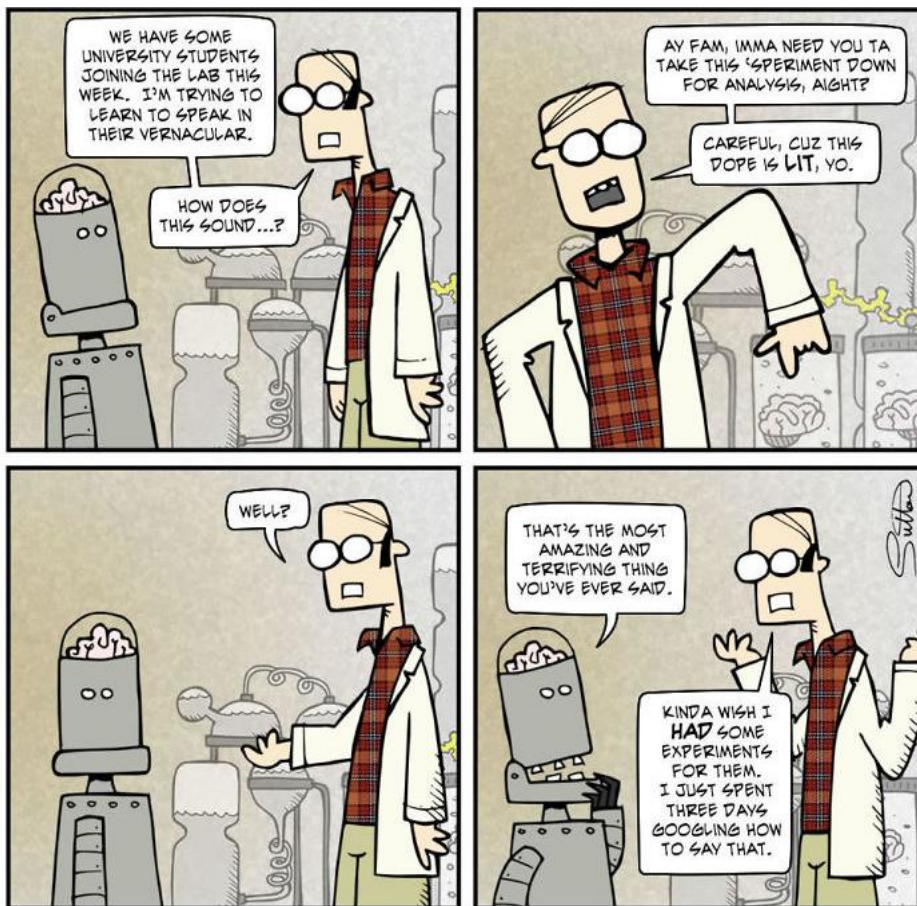
血型	你可以捐給	你可以接受
A ⁺	A ⁺ , AB ⁺	A ⁺ , A ⁻ , O ⁺ , O ⁻
B ⁺	B ⁺ , AB ⁺	B ⁺ , B ⁻ , O ⁺ , O ⁻
AB ⁺	AB ⁺	所有血型
O ⁺	O ⁺ , A ⁺ , B ⁺ , AB ⁺	O ⁺ , O ⁻
A ⁻	A ⁻ , A ⁺ , AB ⁺ , AB ⁻	A ⁻ , O ⁻
B ⁻	B ⁻ , B ⁺ , AB ⁺ , AB ⁻	B ⁻ , O ⁻
AB ⁻	AB ⁻ , AB ⁺	AB ⁻ , A ⁻ , B ⁻ , O ⁻
O ⁻	所有血型	O ⁻

- blood group O is the most common blood group. About 48% of people in Hong Kong have blood group O.
- receiving blood from wrong ABO group can be life-threatening due to the attack of cells
e.g people with blood group B cannot be given group A blood because their anti-A antibodies will attack the group A cells.
- Blood type O is known as the universal donor

Blood group is inherited from parents :

血型配對表

父母血型	可能血型	不可能血型
皆A型	A、O	B、AB
A、B	A、B、AB、O	--
A、AB	A、B、AB	O
A、O	A、O	B、AB
皆B型	B、O	A、AB
B、AB	A、B、AB	O
B、O	B、O	A、AB
皆AB型	A、B、AB	O
AB、O	A、B	AB、O
皆O型	O	A、B、AB



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RELAXING ZONE

				4		6		
7						9	1	
	1	6	8					2
		2			5		8	
		7						1
		9				2		
		8	2			4		
9				6			7	
	4			8				

6	2	1	7	8	9	3	4	5
3	7	8	4	6	5	1	2	9
9	5	4	3	1	2	8	7	6
4	6	2	8	3	7	9	5	1
1	9	5	6	2	4	7	3	8
7	8	3	5	9	1	2	6	4
2	4	7	9	5	8	1	6	3
5	1	9	2	3	6	4	8	7
8	3	6	1	4	7	5	9	2

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