Forensic Science – Blood Types and Blood at a Crime Scene

On Firefly there is a booklet of information about blood types and blood at a crime scene.

1. What is an antigen?

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1. If a person has antigen A on their blood, what type of blood do we say they have? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. If a person has antigen B on their blood, what type of blood do we say they have? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. If a person has both antigens A and B on their blood, what type of blood do we say they have? \_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. If a person has no antigens on their blood, what type of blood do we say they have? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Rhesus is a third kind of antigen (as well as whether someone has antigen A and/or whether they have antigen B). There are 8 kinds of combination of these antigens on blood cells. Tick the boxes in the table below to show which antigens are present in the following blood types. Two have been done for you.

|  |  |  |  |
| --- | --- | --- | --- |
| Blood Type | Antigen A? | Antigen B? | Rhesus Antigen? |
| A+ | ✓ | 🗶 | ✓ |
| A- |  |  |  |
| B+ |  |  |  |
| B- |  |  |  |
| AB+ |  |  |  |
| AB- | ✓ | ✓ | 🗶 |
| O+ |  |  |  |
| O- |  |  |  |

1. Check your answers are correct before moving on to the next question.
2. If you have blood type A+, your body will have antigen A and the rhesus antigen present. But as your body does not have any antigen B on the surface of your blood cells, your body will have antibodies against antigen B as this is foreign to your body. Complete the table below to show which antibodies the following blood groups have.

|  |  |  |  |
| --- | --- | --- | --- |
| Blood Type | Antibody A? | Antibody B? | Rhesus Antibody? |
| A+ | 🗶 | ✓ | 🗶 |
| A- |  |  |  |
| B+ |  |  |  |
| B- |  |  |  |
| AB+ |  |  |  |
| AB- | 🗶 | 🗶 | ✓ |
| O+ |  |  |  |
| O- |  |  |  |

1. Which blood group has no antibodies and can therefore receive a transfusion of any blood group? This is called the universal acceptor.

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1. Which blood group has all three antibodies and can be given to any of the other blood groups? This is called the universal donor.

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1. What is the problem for people who have the blood group you gave to the answer for Q10?

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1. Which is the most common blood group?

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1. Why is a presumptive test for blood used?

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1. What are the other things which can give a positive result for this test?

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1. What else might police or forensic officers use to help them at a crime scene and why?

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