A story of drug discovery

Activity sheet A – A story of drug discovery questions

1 Why is it so difficult to find a chemical that kills disease-causing micro-organisms without harming the healthy parts of the body?

2 How did the discovery of synthetic dyes help Koch in his research to identify the bacteria that cause diseases?

3 How did Ehrlich's work with dyes help him to think of the idea of 'magic bullets' to treat illnesses?

4 For what chemical reason did Ehrlich decide to investigate arsenic compounds after his lack of success with azo dyes?

5 Why was the first 'magic bullet' called 'Ehrlich 606'?

6 **a)** Why did Domagk decide that a dye that was fast (stuck strongly) on wool might also be attracted to the proteins of bacteria?
b) Was Domagk's theory the same as Ehrlich's theory?

7 'Magic bullets' such as Prontosil became less important in the treatment of bacterial disease after the 1940s. Suggest a reason for this.

8 Explain why antibodies produced to fight chicken pox do not work against measles.

9 Leukaemia sufferers have cancer cells in their bone marrow. Suggest how monoclonal antibodies could help in the treatment of leukaemia.

10 All chemotherapy is likely to have some unpleasant side effects. Suggest a reason why.

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