

AS Level Biology B
H022/01 Foundations of biology

Question Set 7

- 1 An ectopic pregnancy occurs when a fertilised egg cell implants outside the uterus, often in a fallopian tube. Methotrexate is an enzyme inhibitor that has been used in the medical treatment of ectopic pregnancies.

Fig. 1 shows the enzyme reaction inhibited by methotrexate.

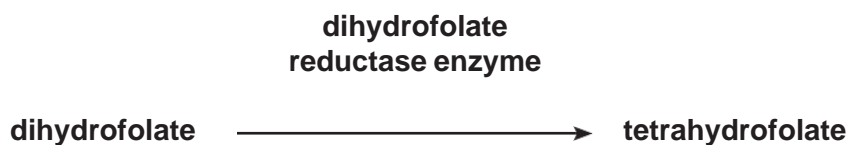


Fig. 1

- (a) The relative concentrations of dihydrofolate and methotrexate determine the rate of the reaction shown in Fig. 1, but the maximum rate of reaction can still be achieved even in the presence of methotrexate.

(i) Explain how the maximum rate of the reaction can still be achieved despite the presence of methotrexate.

[3]

(ii) Tetrahydrofolate is essential in subsequent reactions that synthesise purine nucleotides.

Name **two** purine nucleotides.

[1]

(iii) Explain why methotrexate will eventually cause the death of the fertilised egg cell in an ectopic pregnancy.

[2]

- (b) Aspirin is another example of an enzyme inhibitor that can be used for medical purposes.

Aspirin acts as an anti-prostaglandin so is commonly used to treat inflammation and relieve pain.

Give **one** other effect of aspirin in the human body.

[1]

Total Marks for Questions Set 7: 7



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