

# Unit 8 - Week 6: DNA damage, mutation and cancer

## Course outline

How does an NPTEL online course work?

Week 0: Prerequisite

Week 1: Nucleic acids and proteins

Week 2: Nucleic acids and proteins

Week 3 : Synthesis of Nucleobases and Nucleotides

Week 4 : DNA Replication, Polymerases, DNA Sequencing and PCR

Week 5 : DNA Replication, Polymerases, DNA Sequencing and PCR

Week 6: DNA damage, mutation and cancer

● Lec 17: Chemistry behind DNA damage and mutation I

● Lec 18: Chemistry behind DNA damage and mutation II

● Lec 19: DNA repair

○ Quiz : Assignment 6

● Lecture notes: Week 6

○ Weekly feedback form for week 6

Week 7: DNA to proteins: transcription, translation and genetic code`

Week 8: Protein Sequencing and Solid Phase Peptide Synthesis (SPPS)

Week 9: Chemical Synthesis of Peptides and its therapeutic applications; Spectroscopic techniques for biomolecules.

Week 10: Modern techniques for biomolecules study, purification and characterization; Molecular probes

Week 11: Molecular probes and Chemistry of carbohydrates

Week 12: Chemistry of carbohydrates and Recap

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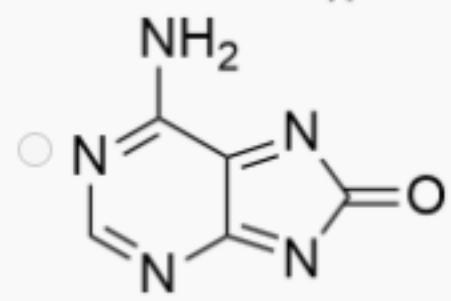
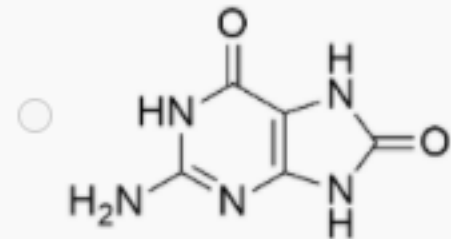
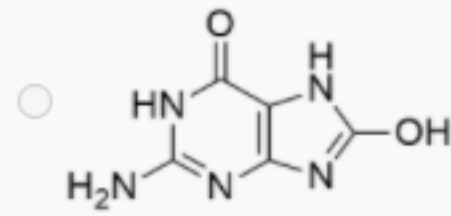
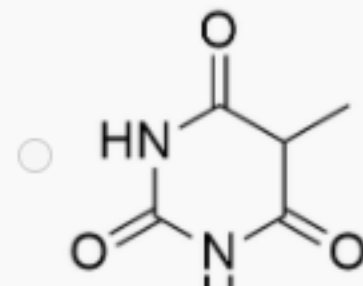
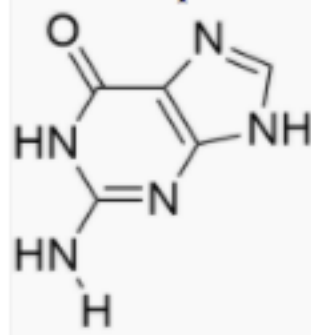
## Assignment 6

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2020-03-11, 23:59 IST.

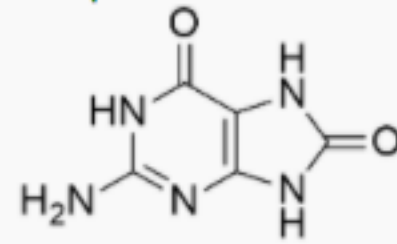
1) The product formed after ROS induced DNA damage is:

2 points



No, the answer is incorrect. Score: 0

Accepted Answers:



2) The statement below is true or false? Reactive oxygen species (ROS) are formed as a natural byproduct of the normal metabolism of oxygen. Increasing level of ROS may cause significant damage to DNA and create oxidative DNA lesions. Cumulatively, this is known as oxidative stress.

1 point

True

False

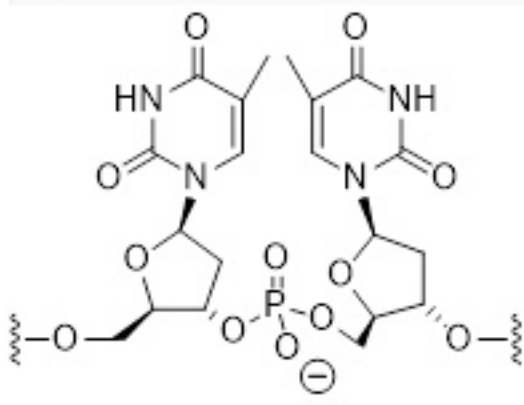
No, the answer is incorrect. Score: 0

Accepted Answers:

True

3) Identify the structure.

1 point



Thymine-thymine dimer

Adenine-adenine dimer

Cytosine-cytosine dimer

Guanine-guanine dimer

No, the answer is incorrect. Score: 0

Accepted Answers:  
Thymine-thymine dimer

4) Which one of the following genes works as a tumor suppressor gene?

1 point

FOXP3

Oncogene

p53

BRCA1

No, the answer is incorrect. Score: 0

Accepted Answers:  
p53

5) DNA absorbs at \_\_\_\_\_, in the range of \_\_\_\_\_

3 points

320-400 nm, UVA

300-320 nm, UVB

260-280 nm, UVC

260-400 nm, UVA

No, the answer is incorrect. Score: 0

Accepted Answers:  
260-280 nm, UVC

6) When a 5'-C-C-3' sequence DNA is irradiated under UV light, the major product is:

2 points

Dewar photoproduct

Cis-syn cyclobutane pyrimidine dimer

Trans-syn cyclobutane pyrimidine dimer

(6-4) photoproduct

No, the answer is incorrect. Score: 0

Accepted Answers:  
Cis-syn cyclobutane pyrimidine dimer