DNA mutation repair

i i

- Base excision repair (SMALL lesions) a.
 - Glycosylase -Remove deaminated Cs -Remove deaminated As -Correct alkylated bases -Correct oxidised bases -Correct bases with opened rings -Correct bases when (C=C) becomes a (C-C)



ii. Endonuclease (endo: nuclease cleaves within the polypeptide chain) -Recognize the base \rightarrow cuts it \rightarrow polymerase replace with the correct base \rightarrow ligase seals it



- iii. Exonuclease of DNA polymerase II -Proofread nucleotides added, incorrect ones bent away into the pocket to be cleaved
- iv. Ligase -Seals the nicks in Okazaki fragments



b. Nucleotide excision repair (LARGE lesions)

-Example of mutation 1: Covalent reaction of DNA bases with large hydrocarbons e.g. carcinogen benzopyrene

-Example of mutation 2: Pyrimidine dimers (T-T, T-C, C-C) caused by sunlight