

P079 Nucleotide excision repair - from recognition to incision
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UvrB is a helicase, which together with UvrA performs DNA damage recognition in prokaryotic Nucleotide Excision Repair (NER), a repair mechanism responsible for the removal of a vast diversity of bulky DNA damages. Understanding the underlying mechanism of damage recognition and repair is an important issue since NER is used by all organisms to maintain genomic stability. To decipher the process of damage recognition and differentiation between damaged and non-damaged DNA, structures of UvrB in complex with different DNA substrates should be available. Furthermore, the trimeric-complex of UvrB, DNA and the endonuclease UvrC will depict the mechanism that leads from recognition to incision of damaged DNA.

In addition to structural analyses, different assays to evaluate the interaction properties of UvrB, DNA and UvrC are conducted. The knowledge derived from these experiments will provide further insight towards an understanding of the damage recognition and incision process.

Currently, newly designed DNA substrates are analyzed regarding their ability to form UvrB-DNA complexes. A trimeric-complex consisting of UvrB, damaged DNA and UvrC was confirmed and crystallization trials are underway.