

**A new mechanism of DNA damage response in the absence of LexA/RecA type canonical SOS response has been characterized in radioresistant bacterium *Deinococcus radiodurans*.**

Majority bacteria use LexA/RecA type canonical SOS response mechanisms for their cell cycle regulation in response to DNA damage. *Deinococcus radiodurans* that is highly resistant to DNA damage does not display SOS response. A new type of DNA damage response mechanism that involves Ser/Thr quinoprotein kinase (RqkA) has been discovered in this bacterium, which display all the features of cell cycle regulation as reported in higher organisms.

