

Nuclear organization, chromatin structure and DNA double-strand breaks repair

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Abstract:

Cells are equipped with the two main pathways for double-strand breaks (DSBs) repair: the dominant one is nonhomologous end-joining (NHEJ) and the other is homologous recombination (HR). Although the respective molecular mechanisms have been well characterized, the determinant of pathway choice remains unclear.

In this JC, I'm going to introduce an article, in which authors propose that nuclear compartmentalization is one of the regulators of DNA repair pathway [1]. Also, I'd like to review the previously-reported factors: cell cycle, specific proteins, chromatin structure and so on.

References:

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2. Kass EM, Jasin M. 2010. Collaboration and competition between DNA double-strand break repair pathways. *FEBS Lett* **584**: 3703-3708.
3. Goodarzi AA, Jeggo PA. 2012. The heterochromatic barrier to DNA double strand break repair: how to get the entry visa. *Int J Mol Sci* **13**: 11844-11860.