

**Regulator of telomere elongation helicase 1 (RTEL1)** is a DNA helicase crucial for regulation of telomere length in mice while its loss has been associated with shortened telomere length, chromosome breaks, and translocations. Moreover, RTEL1 is an important member of the DNA double-strand break-repair (DSBR) pathway. It maintains genome stability directly by suppressing homologous recombination through disassembling D loop recombination intermediates during DNA repair. Antirecombinase properties of RTEL1 make it the key protein required in meiosis and mitosis to execute non-crossover way of DSBR by promoting synthesis-dependent strand annealing (SDSA). Defect in any of these functions might lead to glioma predisposition in human.