

Elizabeth Blackburn Encyclopedia Article

Elizabeth Blackburn

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1948-

American molecular biologist who has been a leader in the study of telomeres and telomerase. Telomeres are specialized structures containing short, repeating nucleotide sequences and are found at the ends of eukaryotic chromosomes. Telomeres seem to protect the integrity of the chromosome, but normal somatic cells lose portions of the ends of the telomeres during cell division. Eventually, the unprotected chromosomes become unstable and the cells die. These observations support the telomere theory of aging. In 1985 Blackburn and Carol Greider discovered the enzyme telomerase, an unusual RNA-containing DNA polymerase that can add to the ends of chromosomal DNA. Most normal somatic cells lack telomerase, but cancer cells display telomerase activity, which might explain their ability to multiply indefinitely.