

## **TELOMERE STRUCTURE AND THE INDUCTION OF SENESENCE**

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Normal cells undergo senescence in response to a variety of stresses. The attrition of telomeres, occurring after extended proliferation of cells, contributes to the induction of replicative senescence in certain cell types. We demonstrate that the telomeric single-stranded overhang is eroded in normal human fibroblasts entering senescence. This overhang is a key feature of telomere structure, required for the formation of the T-loop and for proper telomere capping. Activity of telomerase causes an extension of the telomeric overhang, indicating that telomerase can maintain the telomere cap. Erosion of the telomeric overhang occurs during cell proliferation, but the direct cause for this process is unknown. We present results studying the effect of various physiologic stresses on the erosion of the telomeric overhang.