

Abstract

It was revealed that by binding to CTCF which is important for maintaining chromosomal structures, hSATII RNA inhibits the function thereof, changes chromosome interaction, and induces transcription of inflammation-associated genes. It has also been discovered that cell death can be selectively induced in senescent cells and cancer cells by suppressing hSATII RNA expression. On the basis of the obtained results, a disease caused by cellular senescence can be treated with a substance that suppresses hSATII RNA or a substance that increases CTCF expression. Whether the disease is caused by cellular senescence can be diagnosed by measuring the expression of hSATII RNA and CTCF, and an epigenomic change of the hSATII DNA region. Thus, it is possible to provide a therapeutic drug for a disease caused by cellular senescence, a method for screening the therapeutic drug, and a method for acquiring data for detecting a disease caused by senescence.