

A p53-inducible lncRNA GUARDIN maintains genome integrity

Mian Wu

University of Science and Technology of China, China

The list of long noncoding RNAs (lncRNAs) involved in the p53 pathway of the DNA damage response (DDR) is rapidly expanding, but whether lncRNAs play a role in maintaining the genome stability is less well known. Here we demonstrate a novel p53-responsive lncRNA-H6 that is essential for guarding genomic integrity. On one hand, it was necessary for preventing chromosome end-to-end fusion through maintaining the expression of TRF2 by sequestering microRNA-23a. On the other, it sustained BRCA1 stability by acting as an RNA scaffold that facilitates the hetero dimerization of BRCA1 and BARD1. As such, silencing of this lncRNA triggered apoptosis and senescence, and inhibited cancer xenograft growth. Our lncRNA-H6 may serve as a novel target for cancer treatment.

Biography

Mian Wu graduated from Nanjing Normal University in 1981 (BS), and obtained his PhD degree from Columbia University, USA in 1988. He then continuously conducted his Postdoctoral research at Harvard University during 1988-1991. Thereafter, he moved to Singapore as an Assistant Professor at the School of Biological Sciences of National University of Singapore. Started from 2000, he worked as a full Professor at University of Science and Technology of China in Hefei, Anhui. His research interests focus on molecular mechanisms for p53-regulated tumor development and regulation of non-coding RNA in tumor metabolism. He has published more than 60 research papers on international peer-reviewed journals with more than 2900 citations.

wumian@ustc.edu.cn