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### **Telomere/telomerase and radiosensitivity**

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**R**adiotherapy is the major method of malignant treatment and the high radioresistance of tumor cells is still the significant reason for the failure of radiotherapy. So identifying new factors that predict radioresistance is an area of intense research and could be of great value in the treatment of cancers. Based on our research during the past 15 years, we find that telomere, telomerase and telomere-binding proteins are important regulators of radiosensitivity. Firstly, our study indicated that telomere length may be used as a promising tool to predict the radiosensitivity of human carcinomas. Further, we found that telomerase and telomere-binding proteins (TPP1, POT1, TRF2 and CTC1) are effective radiosensitization targets in cancer radiotherapy. Moreover, our research team combine CARG element with hTERT promoter to form a new kind of chimeric promoter, which combines gene with ray skillfully and treat tumor with local therapy as well as inducing the expressing of therapeutic gene. Our research team has successfully construct a new kind of chimeric promoter system based on hTERT and verified its radiosensitization effect in cervical cancer, lung cancer and liver cell model. In summary, our research demonstrated that telomere, telomerase and telomere-binding proteins are effective radiosensitization targets in cancer radiotherapy. Now our research mainly focuses on their mechanisms of the radiation-sensitizing effect.

### **Biography**

Yunfeng Zhou has completed his PhD/MD in 1991 from Lyon University, France. He is the Director of Hubei Cancer Clinical Study Center, Hubei Key Laboratory of Tumor Biological Behaviors and Hubei Radiotherapy quality control center. His main research fields including telomere/telomerase in anti-cancer therapy and radiation-guided gene therapy of cancer. In addition to being an outstanding oncologist, he was committed to Sino French medical exchange. Due to his great contributions, the French Government awarded him French Knight Badge (2006) and National Order of the Legion of Honour (2009). He published more than 100 papers in international and national journals.

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