

Increased uptake of ^{99m}Tc -HL91 in tumor cells exposed to X-ray radiation

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^{99m}Tc -HL91, a hypoxic marker, may be a predictor of tumor response to radiotherapy and an indicator of tumor oxygenation in the course of treatment. In this study, serial changes in ^{99m}Tc -HL91 uptake were observed in the normoxic condition in a human bladder cancer cell line exposed to a single dose or a fractionated dose of 10 Gy with an x-ray beam. The uptake per cell increased during cell growth retardation induced by the irradiation. This finding indicates that ^{99m}Tc -HL91 uptake is affected by injury to cells due to radiation; it may therefore be difficult to correctly assess the tissue oxygenation status during radiotherapy with ^{99m}Tc -HL91.

Key words: ^{99m}Tc -HL91, tumor cell, hypoxia, radiotherapy