

The influence of microRNA expression profiles after high-LET carbon ion irradiation on Tca-8113 cells

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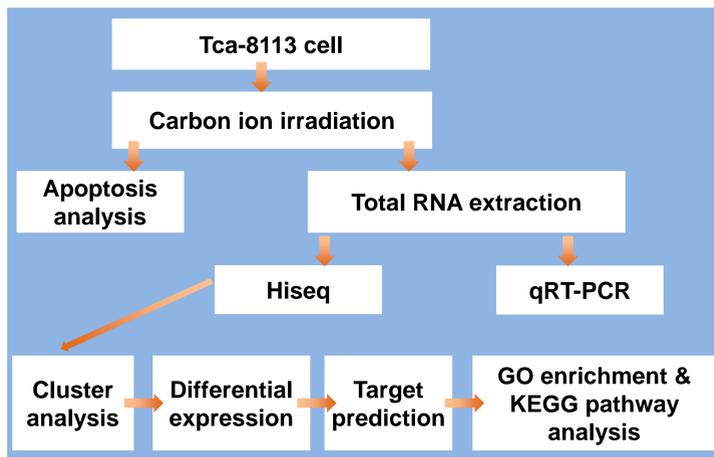
BACKGROUND

Oral Squamous Cell Carcinoma (OSCC) is one of the sixth most common cancer the world, which accounts for more than 40% of head and neck malignant tumors. The occurrence and development process of OSCC is complex, often include many growth factors, the abnormal expression of oncogenes and tumor suppressor genes. Ionizing radiation can induce the microRNAs expression level changes in squamous cancer cells, especially the heavy ion irradiation. Compared with traditional low-LET radiation (e.g. X-ray), the heavy ion radiation not only produce free radicals, but also directly interrupt the double-stranded DNA, so put tumors at high doses, high biological effects of Bragg peak, and improve the efficiency of radiation therapy.

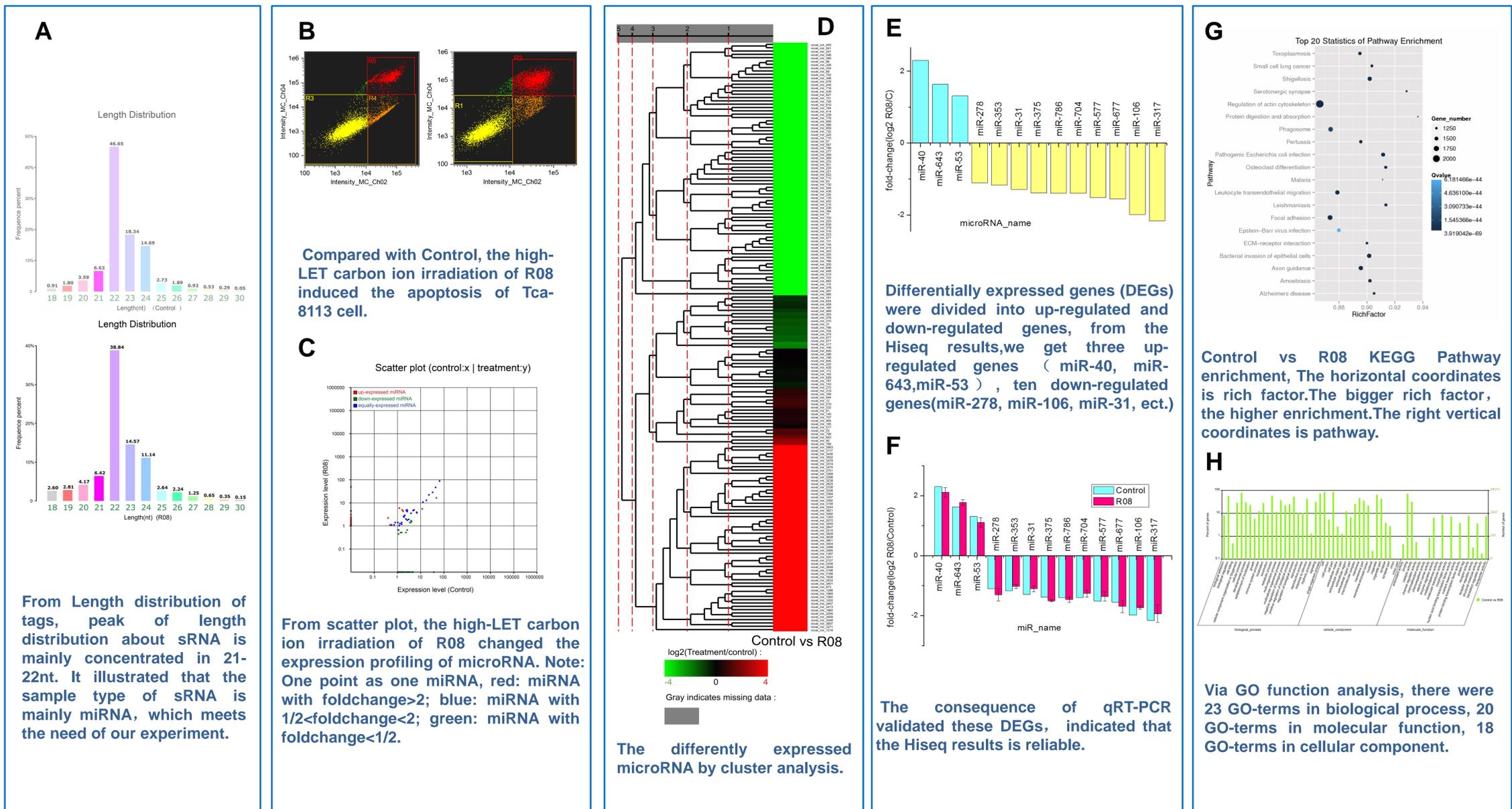
OBJECTIVES

The purposes of this study were to identify differently expressed microRNA after high-LET carbon ion irradiated human tongue squamous carcinoma Tca8113 cells and for further study of the microRNA roles in tumor radiotherapy.

MATERIALS & METHODS



RESULTS



CONCLUSIONS

Our findings indicated that the high-LET carbon ion irradiation played a key role on miRNA expression of Tca-8113 cells, then these differentially expressed microRNA may become the potential molecular diagnostic biomarkers in tumor radiotherapy.

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