Laser Radiation at 1265 nm Decreases microRNA Expression in Murine Melanoma Cells

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During recent decades, laser therapy technologies are in the constant search of new applications and approaches. One of the important fields in cancer prevention and treatment is study of new molecular targets such as microRNA, which perform multiple functions inside the cell or the whole organism. Altered cancer cell gene expression provide the opportunity to find specific microRNAs and adapt these as molecular targets for lasers with different parameters and regimes.

Here, we study the effects of continuous wave laser radiation at 1265 nm on miR-21, -31, -200c expression in murine melanoma cancer cell line B16-F10. These microRNAs participate in many intracellular reactions, regulate gene expression and are in association with anti-cancer drug resistancy. We demonstrate that laser radiation at 1265 nm decrease the expression of all three microRNAs, presumably, altering the functioning.