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Promotion of cell proliferation using atmospheric-pressure radical source[1] MASAFUMI ITO, MASASHI OKACHI, TAKAYOSHI KOIZUMI, JUN-SEOK OH, Meijo University, HIROSHI HASHIZUME, Nagoya University, TOMIYASU MURATA, Meijo University, MASARU HORI, Nagoya University — In this study, we have focused on the effects of neutral radicals on cell proliferation and treated budding yeasts and mouse fibroblast cells in solutions using neutral radical source, which can selectively supply neutral radicals without charged species and optical emissions. The activation and inactivation effects of neutral oxygen or nitrogen-oxide radicals on cells were investigated using a cell count and a colony count method, respectively. The radical densities supplied from the radical source were measured using VUVAS and UVAS. Based on the measurements of free residual chloride and hydrogen peroxide concentrations in the solutions treated with radicals, we have investigated their effects on the activation and the inactivation. From these results, we have concluded that the main factor for the inactivation in PBS solutions is due to the hypochlorous acid generated in the PBS irradiated with oxygen radicals. On the other hand, we have found that the main factor for the promotion is not the hypochlorous acid but other radicals.

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