

**Evaluation of Effect of Intermediate Frequency Magnetic Field  
on Gene and Cell Differentiation**

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Magnetic field (MF) ranged from zero to several kHz are known to be generated from various sources in rolling stock. However, there are only a few studies on health effects of MF with such frequency of kHz as named intermediate frequency (IF). In this study, biological effect of IF-MF was evaluated using mammalian cells and an IF-MF exposure system which has been developed for this study. The results of micronucleus assay and mutation assay indicated that no effect of 21 kHz IF-MF was found in the cells exposed to up to 3.9 mT for 24 hrs. Also, cell differentiation assay using murine embryonic stem cell did not show any effect of the IF-MF.