

## **Clinical Progression of Transplanted Large Granular Lymphocytic Leukemia In Fischer 344 Rats Exposed to 60 Hz Magnetic Fields**

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The purpose of this study was to determine if 60 Hz magnetic fields can alter the clinical progression of leukemia in an animal model. Large granular lymphocytic (LGL) leukemia cells from spleens of leukemic rats were transplanted into young male Fischer 344 rats, producing signs of leukemia in approximately 2-3 months. The animals were randomly assigned to 4 treatment groups (108/group) as follows: 1) 10G (1.0 mT) linearly polarized 60 Hz magnetic fields, 2) sham exposed [null energized unit with residual 20 mG (2 uT) fields], 3) ambient controls [1 mG (0.1 uT)], and 4) positive controls (a single 5 Gy whole body exposure to <sup>60</sup>Co 4 days prior to initiation of exposure). All rats were injected intraperitoneally (ip) with  $2.2 \times 10^7$  LGL leukemic cells at the initiation of exposure or sham exposure. The magnetic fields were activated for 20h/day, 7days/week, allowing time for animal care. The experimental fields were in addition to natural ambient magnetic fields. Eighteen rats from each treatment group were bled, killed, and evaluated at 5, 6, 7, 8, 9, and 11 weeks of exposure. Peripheral blood hematological endpoints, changes in spleen growth, and LGL cell infiltration into the spleen and liver were measured to evaluate the leukemia progression. NO significant or consistent differences were detected between the magnetic field exposed groups and the ambient control group, although the clinical progress of leukemia was enhanced in the positive control animals. These data indicate that exposure to sinusoidal, linearly polarized 60 Hz, 10 G magnetic fields did not significantly alter the clinical progression of LGL leukemia. Furthermore, the data are in general agreement with previous results of a companion repeated-bleeding study in which animals were exposed for 18 weeks.

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