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915MHz Electromagnetic Fields Effects on Learning and Memory of the Immature Wistar Rats

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Abstract: Objective To investigate the biological effects of 915MHz electromagnetic fields on learning and memory of the immature Wistar rats（50-90g）.

Methods Male Wistar rats（50-90g）were exposed to 915MHz electromagnetic fields 2 hours per day for 5 days a week in 6 weeks, the intensities of the EMF exposure were 0V/m, 30V/m, and 60V/m. Bait maze and water maze were used to measure the ability of learning and memory. **Results** For 3 weeks & 6 weeks of 915 MHz EMF exposure, the error times and span of training of bait maze had been seen significantly difference in the exposed and the sham exposed rats（$p<0.05$, or $p<0.01$）; the training span of the exposed rats with the intensity of 30V/m had no significant difference with different period of exposure, while training span of the exposed rats with the intensity of 60V/m had been found significantly increased ($p<0.01$), the training span of the sham shortened with the course of experiment（$p<0.01$）; water maze experiments also showed that the exposed (60V/m) had spent longer training span than the sham exposed（$p<0.05$）. **Conclusion** 915MHz microwave EMF exposure of 30V/m and 60V/m might have some biological effects on the learning and memory of immature male rats, and there is a trend of dose-response relationship.

Key words: microwaves; electromagnetic fields; rat; memory and learning.