Abstracts

Biological effects of millimeter wave irradiation on mice-preliminary results

A. Bellossi, G. Dubost, J.P. Moulinoux, M. Himdi, M. Ruelloux and C. Rocher. "Biological effects of millimeter wave irradiation on mice-preliminary results." 2000 Transactions on Microwave Theory and Techniques 48.11 (Nov. 2000, Part II [T-MTT] (Special Issue on Medical Application and Biological Effects of RF/Microwaves)): 2104-2110.

Millimeter waves at 60 GHz are suitable for discreet radio contact in restricted area, especially for indoor high rate communications. Such wave exposures have not been reported. That is the reason why a study of possible biological effects upon living beings was required. An experimental irradiation device was calibrated and used to irradiate mice. Specific absorption rate and internal fields have been computed for a mouse irradiated at 60 GHz. The measured power flux in free space at the irradiation area is close to 0.5 mW/cm/sup 2/, this probably produces some subtle biological effects. To look for possible biological effects, the authors exposed DBA2 mice grafted either with L1210 cells or with Lewis tumor cells and healthy Swiss mice. There were four obvious observations: there is an individual sensitiveness to 60 GHz waves; the survival of mice grafted with L1210 cells could be increased; the growth of Lewis tumor was enhanced; and the activity of Swiss mice was increased. In any way, those effects have to be taken into account, and the authors suggest prudence before using a 60-GHz waves for indoor communications.

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