Reviewer's report

Title: No effects of GSM-modulated 900 MHz electromagnetic fields on survival rate and spontaneous development of lymphoma in female AKR/J mice.

Version: 1  Date: 12 May 2004

Reviewer: Claudio Pioli

Reviewer's report:

General

In this manuscript the authors investigated the effects of exposure to GSM-modulated 900 MHz electromagnetic fields on lymphoma incidence in AKR/J mice. Previous studies on cancer development performed with genetically-predisposed mice exposed to electromagnetic fields produced contrasting results, indicating that further investigations are needed. In the present study animals were exposed to SAR of 0.4 W/kg, whole body, 24 hours/day, starting at 4-5 weeks of age. Results on body weight, water consumption, survival and incidence of lymphomas at death are shown. Although the topic is interesting, the present study needs to address some specific points before to be accepted.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. The authors quote previous publications (#28,29) were the exposure system and dosimetry have been already described. However, in the quoted papers the height of the radial waveguide is 14 cm whereas in the present system is 17 cm. Is there a misprint? In case the height is really different the authors should describe the resulting differences in the electromagnetic field distribution.

2. The exposure of “running” animals allows to prolong the exposure time to several hours/day as the authors did. However, as mice can vary the position and have the tendency to group in a corner of the cage the authors should describe the different “configurations” they considered and how they established the standard deviation value (+40%).

3. According to the Mouse Tumor Biology database (http://tumor.informatics.jax.org/FMPro?-db=TumorInstance-&-format=mtdp.html&-view and links) AKR mice have also a low (10-20%) frequency of lung tumours and very low frequency (<10%) of other tumours such as mammary gland, intestine and liver tumours. Did the author observe any difference in the incidence of these tumours in exposed versus sham-exposed mice? Did the mice that died due to the lymphoma develop other tumours histologically detected? Some histopathological analyses should be shown.

4. The authors should show at least some histopathological analyses to confirm gross necropsy evaluations. A complete description of results on histopathological analyses, that the authors declare will be published after completion, would largely improve the quality of the manuscript and give more information on the possible effects of electromagnetic fields on cancer development.

5. Results are shown as lymphoma-associated mortality and no statistically significant differences appear (fig.3). AKR/J mice develop, as confirmed by the control group, lymphomas at very high incidence: it might be difficult to see an increase due to electromagnetic field exposure. It would be
more informative to show also the time to tumour, i.e. time when a tumour is first detected by necropsy, including microscopic analysis, before to exclude possible effects.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

The number of experimental groups in the methods paragraph of the abstract is not explained clearly

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Discretionary Revisions (which the author can choose to ignore)

**What next?**: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

**Level of interest**: An article whose findings are important to those with closely related research interests

**Quality of written English**: Needs some language corrections before being published

**Statistical review**: No

**Declaration of competing interests**: None