Japan and Korea Planning Their Own Cell Phone Animal Studies

Verifying NTP Cancer Findings

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Japanese and Korean officials are working on a partial replication of the U.S. National Toxicology Program (NTP) animal study on cancer risks from cell phone radiation. The project is expected to be approved and get underway late next year.

Though collaborating on a common experimental design, each country will carry out its own exposures with animals from the same breeder. If the designs are similar enough, the two sets of data will be combined in a joint analysis.

"We have been discussing this issue in Japan," said Masao Taki of the Department of Electrical and Electronic Engineering at Tokyo Metropolitan University, who was a member of ICNIRP from 1996 to 2008. Taki, who is usually well informed on national EMF/RF policies, did not offer any other specifics. He is not alone. Many insiders would not comment at all. The few who were willing to talk insisted on anonymity.

In Korea the project has been dubbed "NTP Plus," though "NTP Lite" might be more appropriate.

Microwave News has been told that the new project will be much less ambitious than that of the NTP, which cost in excess of $25 million. The NTP ran eight different experiments: male and female mice and rats were each exposed to GSM or CDMA radiation.

In contrast, the Japanese and Koreans would each run a single permutation: male Sprague-Dawley rats exposed to one type of radiation. It was NTP's male rats that showed "clear evidence" of a cancer risk.

The Japanese are slated to test CDMA, while the Koreans have yet to make a final decision. They may decide to use 900 MHz LTE

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2023 Articles
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2020 Articles
2019 Articles
2018 Articles
2017 Articles
2016 Articles
2015 Articles
2014 Articles
2013 Articles
2012 Articles
2011 Articles
2010 Articles
2009 Articles
2008 Articles
2007 Articles
2006 Articles
2005 Articles
2004 Articles

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(4G/5G), but others want to stick with CDMA to validate —or refute — the NTP results. Another concern is that if the two countries use different signals, they would be unable to do a joint analysis.

Both are likely to use a smaller number of animals than the NTP. Japan will expose 70 rats compared to 105 in each of the NTP animal groups. The Koreans have yet to settle on a sample size.

In addition to the exposed rats, Japan is planning to include three sets of controls: “shams” that would be treated exactly the same way as those exposed but without radiation, “cage controls” that would be allowed to live free over the course of the experiment, and what might called “thermal controls.” This last group would be exposed to some other physical agent —probably infrared radiation — to raise the rats’ core temperature. The objective is to test the possibility that a thermal stimulus can lead to glioma or schwannoma of the heart, as seen in both the NTP and Italian Ramazzini studies following RF exposure. The Koreans are said to be using only two of the three, forgoing the thermal controls.

As with the NTP experiments, both countries will cycle the radiation on and off every ten minutes. The rats will be exposed for 18 hours/day for two years beginning in the womb. The intensity of the RF exposures has not yet been decided, but SARs of 0.4 to 4 W/Kg are under consideration.

Sources stressed that no final decisions have been reached and the design of each country’s experiment may change.

Like NTP and Ramazzini, the new project will use free-roaming animals to avoid stress that could confound the results. (This happened 20 years ago in the ill-fated PERFORM-A, the European RF–animal project.) Reverberation chambers will be built locally and are expected to have a different design than those supplied by IT’IS in Zurich for the NTP animal exposures.

One well-placed Japanese observer expressed concern that the Ministry of Internal Affairs and Communications (MIC) is in charge of the new project. A health agency would have been preferred. The ministry has a conflict, he pointed out, because its main mission is to improve communication networks. Another fear is that MIC will place too much emphasis on engineering at the expense of biology.

Consultations with NTP and a Meeting in Paris

Japanese and Korean officials have already consulted with NTP’s Michael Wyde, according to John Bucher, a former associate director of the toxicology program. Wyde ran the day-to-day operations of the NTP study and is now working to complete the final report. (It is expected by the end of the year.) Bucher serves as a senior scientist but remains in charge of the NTP cell phone project.

There will be further discussions of the Asian initiative at the upcoming GLORE 2018 meeting to be held in Paris, November 12-13. GLORE —an acronym for Global Coordination of Research and Health Policy of RF Electromagnetic Fields— brings together

representatives from government, industry and academia. It began over 20 years ago as a collaboration between Japan and Korea; the U.S. and European countries joined later. (For more background, see this short PowerPoint from last year's meeting at the FCC in Washington.)

Joe Wiart, of Telecom Paris Tech, a prominent engineering school and formerly of France Telecom (now Orange), is helping organize the November meeting. As in previous years, Wiart told us, the first day is open to all, but the second is by invitation only. The rationale for closing the doors is to "discuss political/critical issues," explained Katsuya Watanabe, a senior MIC official, at the 2016 GLORE conference in Yokohama.

Wiart said that the agenda is still in preparation. A draft obtained by *Microwave News* indicates that a major topic of discussion will be the new 5G wireless systems and the challenges they pose to RF exposure assessment and epidemiology.

Also planned is an ICNIRP presentation on its recent critique of the NTP and Ramazzini animal studies. That unsigned statement argued that the studies were too inconsistent and had too many limitations to justify a revision of exposure limits.

Immediately following GLORE 2018, ICNIRP will have its own three-day meeting. It has a full agenda, according to Eric van Rongen, the chairman of the Commission. During the first two days, members will review the more than 100 comments that have been received on ICNIRP's draft RF guidelines and will also try to complete a statement defining the Commission's "basic philosophy," van Rongen told us. On the third day, November 16, ICNIRP will hold its annual general meeting.

Japan–Korea Project Described

April 28, 2022

Japanese and Korean researchers discuss their experience in designing this small-scale repeat of the NTP animal study in a new paper published in *Bioelecromagnetics.*

The paper, "An International Collaborative Animal Study of the Carcinogenicity of Mobile Phone RF Radiation: Considerations for Preparation of a Global Project," is open access. The lead author is Korea's Young Hwan Ahn.

NTP, NTP Lite, RF animal studies, brain cell phones, Japan, Korea, John Bucher, Michael Wyde, Masao Taki, ICNIRP, GLORE, Eric van Rongen, Young Hwan Ahn,

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