Marker for EMF Response?

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Dariusz Leszczynski has been applying the powerful new techniques of molecular biology (specifically, proteomics) to better understand EMF effects. A couple of years ago he predicted that they would "help in the discovery of the biophysical and biochemical mechanisms."

Now, Leszczynski and collaborators at Finland's Radiation and Nuclear Safety Authority (STUK) in Helsinki have shown that relatively low-power mobile phone radiation can alter the production of proteins in human skin. Ten women volunteered to have their forearms irradiated with 900 MHz GSM radiation for one hour at an SAR of 1.3 W/Kg —well below the European cell phone exposure standard of 2.0 W/Kg. A small sample of skin was then removed and analyzed. The levels of eight different proteins (out of a total of 580) were found to be significantly changed.

Perhaps most tantalizing is that two of these proteins were changed in all ten subjects. This might one day lead to a marker for an EMF-specific response.

The function and significance of these altered protein levels are at this point unknown. But, as Leszczynski pointed out in a press release, issued by STUK earlier today, this is the first time anyone has examined whether RF radiation can cause changes in protein expression in living people. "Mobile phone radiation has some biological effect," he said. "Even if the changes are small, they still exist."

"All this means that the human body recognizes this low-level radiation and reacts to it," Leszczynski told *Microwave News.* These effects are similar to those Leszczynski has previously observed in human cells grown in the lab. The next step, he said, is to extend this pilot study to 50 or as many as 100 volunteers. But first, he has to find the necessary funding.

These new findings appear in *BMC Genomics,* an open access journal, which allows free downloads of both the abstract and the

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