

[Ed: **messenger RiboNucleic Acid (mRNA)** is a molecule of **RNA** encoding a chemical "blueprint" for a protein product. **mRNA** is transcribed from a **DNA (DeoxyriboNucleic Acid)** template, and carries coding information to the sites of protein synthesis: the ribosomes. Here, the nucleic acid polymer is translated into a polymer of amino acids: a protein. In mRNA as in DNA, genetic information is encoded in the sequence of nucleotides arranged into codons consisting of three bases each.

Acting through the intermediate mRNA also makes it possible to regulate the expression of the genes. **The cell's requirements for a particular protein can vary in relation to the environmental conditions,** to the cell type, the stage of development, and the age of the cell. The mRNA molecules are labile, with a limited lifetime, varying from a few minutes to a few hours.

The cell is capable of adapting its production of them in accordance with prevailing conditions. The regulation of the production of a protein from its gene can happen in several ways: by regulating the transcription of the DNA into mRNA, which is called transcriptional control, or by controlling the translation of the mRNA into protein, which is called translational control. Thus the cell can "choose" which parts of the DNA will be transcribed and expressed. Different cells express different parts of the genome to obtain a different phenotype **depending on the presence of regulatory factors.** [to find out more : [Wikipedia](#)]

Scientific publication U.S. government <http://www.ncbi.nlm.nih.gov/pubmed/20017629?dopt=Abstract>



2009

Qualitative effect on mRNAs of injury-associated proteins by cell phone like radiation in rat facial nerves.

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Rats were exposed to cell phone radiation for 6 hours per day for 18 weeks. The buccal and mandibular branches of the facial nerve were evaluated for this study.

The mRNA levels of four proteins that are usually up regulated when an injury has occurred were investigated; included were Calcium ATP-ase, Endothelin, Neural Cell Adhesion Molecule, and Neural Growth Factor. These isolated mRNAs were subjected to RT-PCR and all four were up regulated. [Ed: Protocol combining RT (Reverse Transcriptase), a technique utilising an inverse transcription followed by a PCR (Polymerase Chain Reaction), a method from molecular biology of genetic amplification in vitro, which makes it possible to copy in great numbers (with a multiplication factor of the order of a billion) a known sequence of DNA or RNA from a small quantity (of the order of a few picograms) of nucleic acid.]

The mandibular nerve showed a higher and broader level of up regulation than the buccal nerve.

All four mRNA up regulations for the mandibular nerve and two for the buccal nerve were also statistically significant. These specific injury-related findings were mild. As the use of these cell phones continues, there most likely will be permanent damage to these tissues over the years and the likelihood of tumors, cancers, and system failures will potentially increase.