ELECTROMAGNETIC BASIS OF METABOLISM AND HEREDITY

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ABSTRACT:
"Living organisms control their cellular biological clocks to maintain functional oscillation of the redox cycle, also called the “metabolic cycle” or “respiratory cycle”. Organization of cellular processes requires parallel processing on a synchronized time-base. These clocks coordinate the timing of all biochemical processes in the cell, including energy production, DNA replication, and RNA transcription. When this universal time keeping function is perturbed by exogenous induction of reactive oxygen species (ROS), the rate of metabolism changes. This causes oxidative stress, aging and mutations. Therefore, good temporal coordination of the redox cycle not only actively prevents chemical conflict between the reductive and oxidative partial reactions; it also maintains genome integrity and lifespan. Moreover, this universal biochemical rhythm can be disrupted by ROS induction *in vivo*. This in turn can be achieved by blocking the electron transport chain either endogenously or exogenously by various metabolites, e.g. hydrogen sulfide (H2S), highly diffusible drugs, and carbon monoxide (CO). Alternatively, the electron transport *in vivo* can be attenuated *via* a coherent or interfering transfer of energy from exogenous ultralow frequency (ULF) and extremely low frequency (ELF) electromagnetic (EM) fields, suggesting that–on Earth–such ambient fields are an omnipresent (and probably crucially important) factor for the time-setting basis of universal biochemical reactions in living cells. Our work demonstrated previously un-described evidence for quantum effects in biology by electromagnetic coupling below thermal noise at the universal electron transport chain (ETC) *in vivo*."