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# EE SYSTEM MEDALLION EMISSIONS ALTER ELECTRICAL PROPERTIES OF DNA

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## INTRODUCTION

Previous preliminary studies with the medallion indicated that the energy it emits "energized" an herbal product (from Clar8ty). However, the mechanism whereby The medallion's energy could increase the electrical energy in/through a product is unknown. The present study experimentally tests the hypothesis that the medallion's energy alters the electrical properties of the solvent (water) which then transfers that electrical energy into the herbal mixture. The electrical properties of water were measured using a specially designed method developed at the Quantum-Biology Research Lab. Such measurements have been shown to be extremely sensitive to external energies like electromagnetic/acoustic energy, scalar energy, bio-energy, paramagnetic energy and subtle energy generated by various commercial devices.

Increased electrical conductivity (or decreased resistance) indicates that electron movement is either sped up or stronger in amplitude. In the human body, increased electrical conductivity is associated with enhanced wound - healing (Nucetelli, 2003) and DNA self-repair (Hartzel, 2003). Commercial 'healing' devices exist which apply electricity to the body and ultimately increase electrical conductivity in the skin or into acupuncture meridians. In the case of the skin, for example, applying electricity has an antiaging effect and reduces wrinkles. In the present experiments, electrical conductivity refers to the ability of electrons to propagate between sending and receiving electrodes, although what was actually measured is the ability of water to resist that flow of electrons.

Electrical conductivity refers to the movement of electrons from a negatively charged region (of a cell or a bio-molecule) to a positively charged region. In the case of proteins, electrical current will flow along a strand from a negatively charged amino acid to a positively charged amino acid. In DNA, electrons will flow from a hydroxyl (OH-) ion to an amine (NH3+). Although electrical properties of bio-molecules correlate well with their well-established physical-chemical properties, it is only recently that scientists have begun to seriously investigate the electrical properties of bio-molecules. In general it is known that increasing electrical conductivity makes biological systems function more efficiently.

Electrical conductivity of DNA, for example, is well known to occur along its central axis and across individual strands (Bakhshi, 1994). In the case of DNA, conductivity measures correlate with the functional activity of DNA to repair itself. Thus, increasing conductivity is associated with increased ability of DNA to repair itself (Retel, 1993) and repaired DNA has 20-fold higher conductivity than the same DNA when damaged (Hartzell, 2003). Increased conductivity of DNA is also associated with enhanced intrinsic self-assembly processes (Cai, 2000). On the other hand, large decreases in conductivity are associated with mismatched DNA strands (Hihath, 2005).

**METHODOLOGY**

As a result of its conductivity, the electrical properties of DNA can be measured using a technique called nonlinear dielectric spectroscopy (Treo 2009). In the present study, a modified version of dielectric spectroscopy was used to measure intrinsic frequencies of human DNA. Using a potentiostat from Gamry Instruments (Philadelphia, PA), DNA was stimulated by applying a voltage (30mv) as a weak electric field at varying frequencies and measuring the induced current. A solution of DNA (1mg/ml) was exposed to the energy emitted from the medallion for 60 minutes as depicted in Figure 1.

Proprietary modifications of standard dielectric spectroscopytypically include:

1. taking experimental measurements under resonance conditions
2. calculating probabilistic occurrences of voltage spikes (not signal strength)
3. using nonEuclidian geometry to design appropriate antenna/electrodes

If the induced current response is particularly strong, it can be considered coherent ( laserlike). Moderate and weak current responses were also observed. When calculating the final percent occurrence values an occurrence was recorded whether it was small, medium or large in magnitude. In the present study, measurements were taken at a variety of excitation conditions by adjusting the frequency (from 15 to 100 kHz) and amplitude (from 5 30mV) of the voltage spike. A series of 1215 independent sequential measurements were taken for each sample.

The data was transferred to an Excel spreadsheet for analysis. Due to a phenomenon known as frequency hopping (Drichko 2000), the amplitude (strength) of the induced current response at a given frequency cannot be measured as with normal spectroscopic techniques. Therefore, how often the induced signal appeared, percent occurrence, at each excitation frequency was measured and used to obtain the intrinsic frequencies of DNA. The percent occurrence is a measure of signal strength at each frequency.

**Figure 1**: Exposure system for DNA solution to EE medallions

**RESULTS**

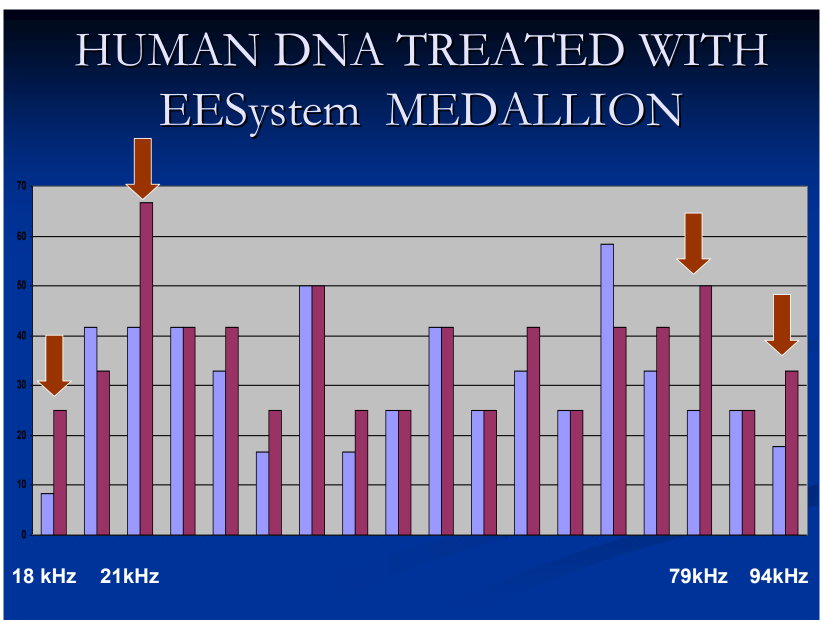


**Figure 2:** Percent occurrence vs frequency measures of human DNA.
Blue bars are before values and black bars are after values

The results indicate that at certain frequencies, notably 18, 21, 79 and 94 kHz, there are significant increases in the induced current response after exposure to the energy emitted by the medallion. These frequencies assumedly corresponds to the resonant frequencies of the energy emitted by the pendant which resonate with these same frequencies in the DNA molecule. The largest effect was observed at 79kHz where a 100% increase was observed. The magnitude of this effect is similar to the effect observed when healers treat DNA (Rein 1995).

**DISCUSSION**

Electrical conductivity of biomolecules, like DNA, proteins and collagen, has been studied and the correlation between their electrical properties and their physical-chemical properties has been established. Electrical conductivity of DNA, for example, is well known to occur along its central axis and across individual strands (Bakhshi, 1994). In the case of DNA, conductivity measures correlate to the functional activity of DNA repair. Increasing conductivity is associated with increased ability of DNA to repair itself (Retel, 1993; Kratochvilova, 2010) and repaired DNA has 20-fold higher conductivity than the same DNA when damaged (Hartzell, 2003). Increased conductivity of DNA is also associated with enhanced intrinsic self-assembly processes (Cai, 2000). On the other hand, large decreases in conductivity are associated with mismatched DNA strands (Hihath, 2005). Increased conductivity is also associated with enhanced intrinsic self-assembly processes of DNA into networks (Cai, 2000).

One method for measuring electrical conductivity is to apply current at different frequencies and measure the response as voltage spikes. Such current-voltage measurements, often used in dielectric spectroscopy, have shown that the electrical properties of bio-molecules are frequency dependent.

Using such conductivity measurements, Del Giudice and Cyril Smith demonstrated discrete voltage jumps at specific resonance frequencies in water as well as a biomolecular enzyme (Del Giudice, 1989). They are considered resonance frequencies because when their extremely narrow bandwidths are consistent with Josephon-like behavior. Such measurements are believed to measure macroscopic quantum coherent behavior of water and biomolecules. Josephson-like behavior is observed in superconductors. Del Giudice mathematically modeled this behavior as Josephson supercurrent mediated by intrinsic coherence domains (Del Giudice, 1988).

Using these techniques it has been shown that electrical conductivity in DNA occurs via two mechanisms - classical electron hopping (Giese, 2002) and quantum electron tunneling (Zikic, 2006). Normally conductivity occurs by both mechanisms, randomly switching back and forth between both. Dr. Rein has discovered that using certain excitation conditions, quantum electron tunneling is favored. Thus, the new method developed at the Quantum Biology Research Lab (QBRL) can be considered as a measure of the quantum properties of DNA.

Since electron and frequency hopping are quantum properties of DNA, it is proposed here that the non-classical (scalar) energy emitted from the medallion can best be measured in a quantum system like DNA.

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