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INTRODUCING METHODOLOGY DETECTING SENSORY SITES AS EMITTERS OF ELECTROMAGNETIC RADIATION IN WARM- AND COLD-BLOODED ANIMALS (INTRODUCING DISTAL LIZARD TAILS AND HUMAN HAIR FOLLICLES COMMONALITIES)

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ABSTRACT

The main purpose of this manuscript is to introduce a simple tabletop optical microscopy methodology allowing for the display and recording of similarities in electromagnetic energy emission in the animal kingdom, namely the Human Hair Follicles and Lizard's tail tips energy emissions. This finding includes warm- and cold-blooded specimens. Details of the technique had been developed in 2015 and subsequently published in 2016 is presented. Since then, numerous papers were written, they range from In Vivo experiments documenting the effect of increasing blood alcohol levels in electromagnetic radiation in humans to the present manuscript detailing commonalities found in human hair follicles with spontaneous detached lizards' tails tips. Essential the technique is the placement of tissue in a single slide preparation (SSP) then covered by drops of diluted Potassium Ferricyanide of formula K3[Fe (CN)6] (Figure 1). For simplicity, in this manuscript the acronyms K3Fe will replace the formula K3[Fe (CN)6]. The intrinsic property of full absorption of incoming electromagnetic radiation by K3Fe triggers crystallization patterns confirming energy emissions of the tissues tested. Images, video-recordings, and selected references to published papers are listed.

Keywords: Biophysics, Molecular, Biophysics as Bridging, Cross Species Similarities, Potassium Ferricyanide, Absorption Incoming Energy, Electromagnetic Energy, Cold-Warm Blooded

DEFINITION OF TERMS

Absorption: The transfer of the energy of a wave to matter as the wave passes through it.... if all the energy is lost, the medium is said to be opaque, ie: Crystallization.

Anisotropy: The property of substances to exhibit variations in physical properties along different molecular axes. It is seen in crystals, liquid crystals and, less commonly, in liquids. Analogy would be selecting direction of wood grain when cutting.

Electromagnetic Fields: Defined as how matter typically electrons bound in atoms takes up a photon's energy — and so transforms electromagnetic energy into internal energy of the absorber. Example is the full absorption of electromagnetic radiation as internal energy by Potassium Ferricyanide (K3Fe).

Body Sensory Systems: Essential anatomical site for EMFs emissions in animal kingdom.

K3Fe: Short version for Potassium Ferricyanide crystals with formula K3Fe (CN)6. CSA # 13746-66-2.

SSP: Acronym for Single Slide Preparation, where a plucked in toto (follicle and shaft) human hair or animal tissue is placed on a glass slide and covered by a solution of diluted K3Fe crystals.

1. INTRODUCTION

The introduction of a simplified method for the detection of electromagnetic energy in plants and animal tissue Benjamin et al. (2016), allowed for the recording of intrinsic similarities in organized electromagnetic energy fields (EMFs) emissions from warm and cold-blooded samples, namely distal human hair follicles and lizard's tail tips. Details are herein presented. The intrinsic property of full absorption of incoming EMFs energy by K3Fe slows the process of crystallization patterns thus confirming the energy emissions of the tissues tested Baranov et al. (2015), Figgis et al. (1969). Still Images, video-recordings, and selected references to published papers are listed. At the end of the presentation, the reader would be able to reproduce *In Vitro* experiments as presented in this paper.

2. MATERIALS AND METHODS

2.1. MATERIALS

1) Potassium FerrIcyanide Crystal. $K_3Fe(CN)_6$.
2) CSA # 13746-66-2.
3) Hair Follicles plucked via tweezers from author's scalp, self-detached small home lizard tails.
4) Microscope glass slides: 25x75x1mm thickness. Pearl Cat. No. 7101
5) Water purity confirmed by handheld electrical fields detector manufactured by Lishtot Detection LTD, Israel. For details link to: https://www.lishtot.com/TDP1.html
6) Room relative humidity monitored by an ACU-RITE sensor model # 01536-RX.
7) Digital Video Microscope Celestron II model # 44341, California, USA.
8) Images downloaded to an Apple Computer MacBook Pro Photo Application.

2.2. METHODS

2.2.1. PREPARING THE SOLUTION

Commercially available bottled water was tested for impurities via a handheld electrical fields sensor (LishtotSensor). A solution was prepared by diluting ≅ 1 pinch of Potassium Ferricyanide (K_3Fe) crystals in 2 drops of the previously tested for impurities bottled spring water. The solution withdrawn as needed via pipette.

2.2.2. THE SINGLE SIDE PREPARATION (SSP)

The SSP is an open-air technique where freshly plucked *in toto* human hairs or any other tissue are placed on a clean 25x75x1mm glass slide; and covered by drops of K_3Fe in solution; the liquid was then allowed to evaporate. Prior to evaporation, the drops were gently touched by a wooden toothpick and dispersed as to cover the follicle and shaft (see below). After the hair sample stops drifting and stabilizes, a clean wooden toothpick was used to gently shepherd the hair sample away from the

drop edges. As evaporation starts, images and video recordings are made and stored. Figure 1

Figure 1

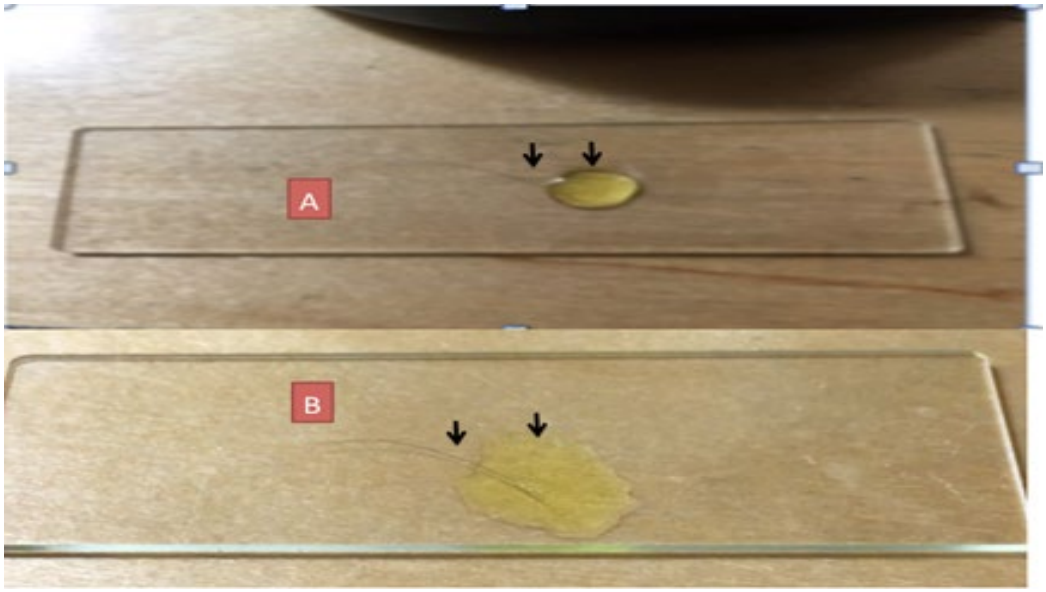

Figure 1 A: Scalp hair on glass slide covered by drop of (Potassium Ferricyanide) covering mainly the hair follicle. B: Same hair. Now the K_3Fe drop surface tension disturbed via wooden toothpick now covering follicle and shaft.

Image reproduced from:

Article Citation: Embi (2022). Introducing Crystallization Backward Suction Trapping Lipids and Debris as Proposed Additional Factor in the Genesis of Coronary Artery Disease. International Journal of Research -Granthaalayah, 8(9), 215-233. https://doi.org/10.29121/granthaalayah.v8.i9.2020.1174

Post Data Processing:

Images and video recordings were labelled, recorded, and printed for further analysis.

3. RESULTS

Freshly plucked via tweezers obtained of author's *In Toto* (hair Follicle and shaft) placed on glass slide imbedded in liquid K3Fe. The image below shows a normal human hair post testing Figure 2. Images of non-disturbed samples show concentric semi-circular K3Fe crystallization images Figure 2, Figure 3)

Conversely, when both tissues (hair follicle and Lizard tail) are cut, the cut end shows aberrant EMFs (Figure 3, Figure 4).

4. HUMAN TISSUE

Freshly Plucked Human Tissue Samples in SSP K3Fe

Figure 2

Figure 2 Plucked Scalp Human Hair in SSP Imbedded in Liquid K3Fe Post Evaporation. Black Arrow: Pointing at Semi-circular Concentric Crystals Reflecting the Hair Follicle's Electromagnetic Energy.

5. REPTILE TISSUE

The freshly plucked tail tip showing similar concentric precipitated K3Fe crystals as seen in Figure 2 above.

Freshly Detached Lizard Tail

Figure 3

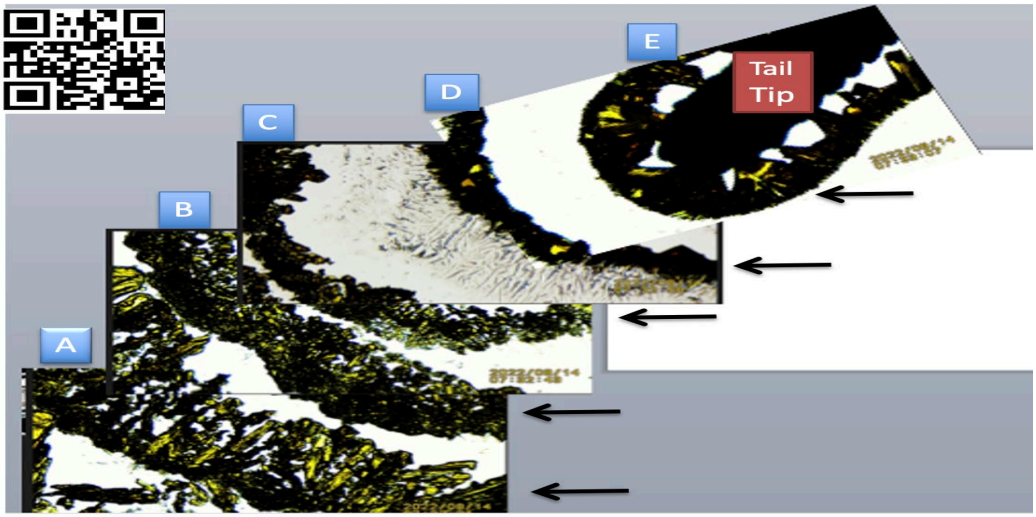

Figure 3 Small freshly cut lizard distal tail tip in SSP K3Fe showing increasing crystals adhesion when nearing the EMFs source.

A, B, C: Further away from tip- Notice greater dispersion of crystals distribution. D, E: Near the tail tip (EMF source). Notice crystals compactness.

Image reproduced from (APA): Embi, A. A. (2022). Introducing Methodology to Detect Dead Tissue Stored Energy. International Journal of Research-Granthaalayah, 10(8), 20–29. https://10.29121/granthaalayah. v10.i8.2022.4733

6. TRANSECTED HUMAN TISSUE

Opposite End of Cut Human Hair Follicle Tissue

Hair Follicle

Figure 4

Figure 4 Large arrow: Transected hair follicle. Small top arrow: Towards Distal Follicle. X: Disorganized K3Fe crystals. Please compare with organized semicircular crystals in distal follicle end Figure 2 above.

7. TRANSECTED REPTILE TISSUE

Opposite End of Lizard Tail Tip.

The same procedure (SSP) was repeated, this time transected lizard tails tips were analysed Figure 5.

Transected Tail Tip End

Figure 5

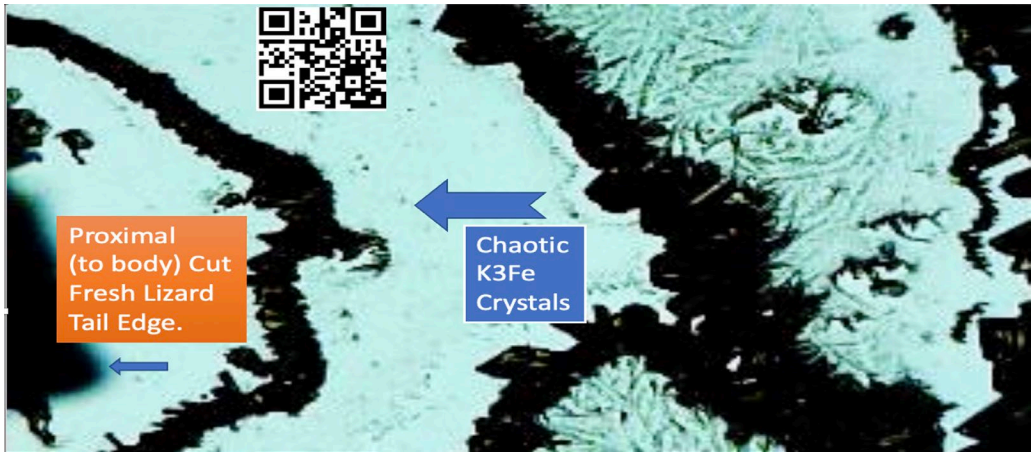

Figure 5 Large arrow: Disorganized K3Fe crystallization, confirming a disturb emission of incoming electromagnetic radiation. Compare with Figure 3 above.

Pointing at cut mid lizard tail point. Notice Towards Distal Follicle. X: Disorganized K3Fe crystals. Please compare with organized semi-circular crystals in distal follicle end Figure 2 above.

8. DISCUSSION

The emission of EMFs by warm blooded hair follicles and cold-blooded lizard tails are introduced. There is commonality present in both groups, namely at the end of untouched lizard tails and hair follicles there are organized semi-circular precipitated K3Fe crystals, indicating stable EMFs energy emission. It must be mentioned that in the original paper introducing the methodology Benjamin et al. (2016) the authors stated that the precipitation of K3Fe crystals were triggered by the sensing of undisturbed incoming EMFs. Stated was at the time "*Results:* As a result of their intrinsic electron transport-based metabolism these biologic entities emitted electromagnetic fields that were imaged by aggregated iron particles outlining the leaves or visualized as circulating aggregated iron particles around the hair follicles. *Conclusions*: This technique can provide a simplified imaging method to provide electromagnetic profiles for living systems in general."

Additional Clarification

Sensory organs are essential for the emission of EMFs in the Animal Kingdom.

Warm- and Cold-Blooded Metabolism

The recording of detectable electromagnetic radiation in a cold-blooded animal tail tip by the K3Fe method was unexpected. This issue was clarified in two publications, where the presence of spinal columns and nerves in the lizard's tails are described, as published "Animals signals must be detected by receiver sensory systems and overcome a variety of local ecological factors that could otherwise affect their transmission and reception. The lizard tail has been hypothesized be part of the animal sensory system, since the lizard tail includes a spinal column and nerves."

Duffy et al. (1991), Peters and Ramos (2022).

Suggested is to repeat experiments placing the reptile in different temperature settings. In this manuscript the lizard was found inside an air-conditioned cooled home with 55% humidity and thermostat set at 76 degrees Fahrenheit.

9. CONCLUSION

1) The finding of undisturbed cold-blooded tissue expressing electromagnetic radiation energy needs further studies at different environmental conditions. The presence of sensory systems in an animal is reported to be essential for the emission of electromagnetic energy.
2) The human hair follicle and lizard's tails are confirmed sensory systems.
3) Body temperature to be a factor.

10. THE QUESTIONS ARISE

What is the lowest body temperature where EMFs emissions ceases?

Unknown at present

In reptiles, there appears to be a body area (distal tail tip) where undisturbed EMFs emissions are detected. In humans the distal hair follicle is also identified as a similar area for organized EMFs detection.

Other Implications

The Potassium Ferricyanide method could be used in drug evaluations or forensics by detecting EMFs signals present in the living or the dead Embi (2022). For example, the human hair follicle has shown a marked *in vivo* temporary increase in EMFs emissions post alcohol ingestion Embí (2020). Hours post consumption normal emissions returned. The findings herein presented could expand human drug evaluations research in cold blooded animals.

11. SUPPLEMENTAL IMAGES

11.1. SUPPORTING VALIDITY OF TECHNIQUE

The validity of the K3Fe methodology was confirmed by this non-drinker author in experiments where x2 alcohol was consumed to the point of exhibiting typical drunken feelings. My hair follicles were analysed control and post alcohol intake Embí (2020). I have taken the liberty to share images from effect of 2 binge drinking episodes on my hair follicles electromagnetic energy emissions Please see below). All 2 figures below reproduced from reference Embí (2020) link: https://doi.org/10.29121/granthaalayah.v8.i10.2020.1568

In addition, the K3Fe method was further confirmed in a recent paper Embi (2022).

11.2. SUPPORTING VALIDITY OF K3FE METHODOLOGY

Figure 6

Control Black Beard Hair in SSP K_3Fe

Figure below of typical display structured orderly crystals semicircles of K_3Fe triggered by the Follicle's EMR.

Figure 6 Human Hair in SSP K3Fe After Evaporation, Showing: F= Follicle. Black Arrows: Pointing at Organized Concentric K3fe Crystallization Due Full Absorption of The Follicle's EMR

Figure 7

Figures Showing Increased Blood Alcohol Concentration Deleterious Effect on Hair Follicle EMR 45 Minutes Post Mix Drink of Wine and Beer

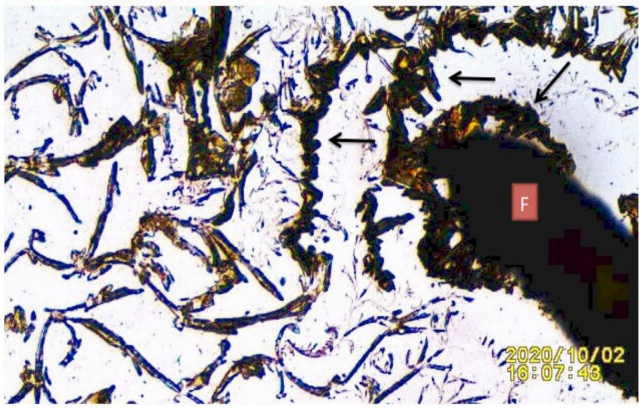

Figure 7 n=1 Showing 45 post binge episode of ingesting 250 ml of white wine, plus one 12 OZ Lager beer consumed within 15 minutes. Black Arrows: Altered organized Crystals semicircles- Indicative of electromagnetic Radiation emission disruption by BAC F: follicle. Black Arrows: K3Fe Crystals Full absorption of follicle EMRs.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

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