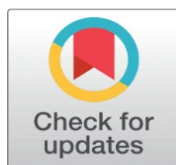
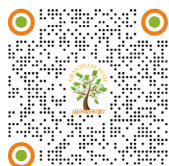


# THE PRESENCE OF ANTIOXIDANTS IN THE HAIR INFUNDIBULUM IMPLICATIONS IN HAIR DISEASES SUCH AS ALOPECIA

Abraham A. Embi  

<sup>1</sup> MBA, 13442 SW 102 Lane Miami, Florida 33186, USA



**Received** 11 April 2022  
**Accepted** 16 May 2022  
**Published** 31 May 2022

## Corresponding Author

Abraham A. Embi,  
[embi21@att.net](mailto:embi21@att.net)

**DOI**  
[10.29121/granthaalayah.v10.i5.2022.4593](https://doi.org/10.29121/granthaalayah.v10.i5.2022.4593)

**Funding:** This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

**Copyright:** © 2022 The Author(s). This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

With the license CC-BY, authors retain the copyright, allowing anyone to download, reuse, re-print, modify, distribute, and/or copy their contribution. The work must be properly attributed to its author.



## ABSTRACT

Anatomically, as a rule the hair in mammals consists of an unseen follicle or root anchored into the skin with a shaft or visible hair exiting exteriorly. As a note of interest, the hair follicle has been described as a miniorgan having its own cells division, metabolism, and aging stages [Schneider et al. \(2009\)](#). As previously stated, “metabolism entails electron transfers in both plants (photosynthesis) and animals (cellular respiration) involving movement of electrons from donor to acceptor along the electron transfer chain thus inducing a current within each cell and from cell to cell” [Embi et al. \(2015\)](#), [Scherlag et al. \(2016\)](#). This continuity of energy transfer in living organisms is at the very essence of life; and is ubiquitously present in all living matter and the generator of Bioelectricity (a.k.a. electromagnetic radiation), the protein enzyme catalase having an essential pivotal role in energy production in the breakdown of toxic materials such as H<sub>2</sub>O<sub>2</sub> into H<sub>2</sub>O and O<sub>2</sub> molecules. During the breakdown of O<sub>2</sub> molecules energy is generated. When catalase is depleted life ends and regional death occurs [Embi \(2018\)](#), [Levin \(2014\)](#). We could then theorize that if cell respiration ceases throughout the entire organism (organs) death ensues [Embi \(2018\)](#). Only in living tissue is that elimination of toxic material such as H<sub>2</sub>O<sub>2</sub> has any relevance.

**Keywords:** Exogenous Material Entering the Hair/Shaft Skin Cavity, and The Presence of Antioxidants

## 1. INTRODUCTION

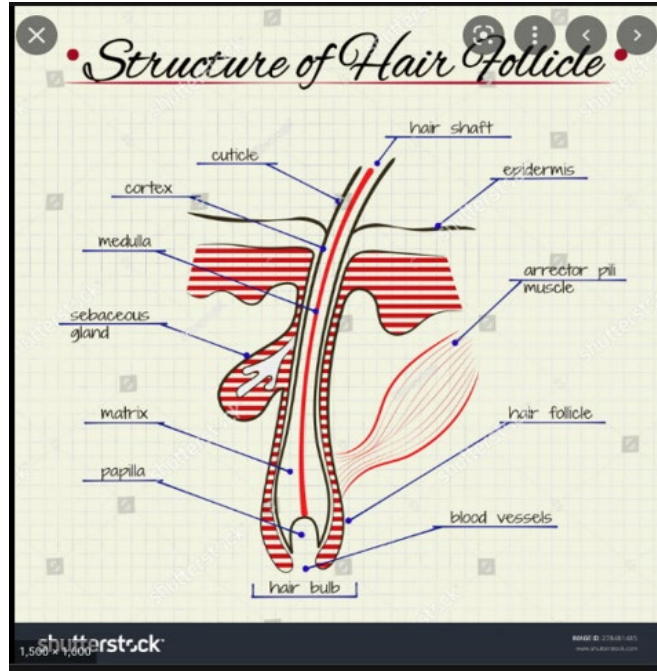
Now that we have established that antioxidants are the essence of life, is time to introduce In Vitro experiments inferring the presence of said antioxidants at the hair/shaft/skin junction and their possible implications. Prior In Vitro experiments by this author has shown the prevalence of bioelectrical crosstalk amongst human tissues, namely the hair and blood [Embi \(2018\)](#). The presence of antioxidants in the hair/shaft skin junction could be also classified as a facilitator of bioelectrical crosstalk between exogenous matter causing diseases such as mites and bacteria or

chemicals entering the most proximal distal hair area at the skin/shaft junction or Infundibulum as shown in [Figure 1](#), [Figure 2](#), [Figure 3](#) plus videos.

“The hair root is in the skin and extends down to the deeper layers of the skin. It is surrounded by the hair follicle (a sheath of skin and connective tissue) [National Library of Medicine \(2019\)](#).”

The human hair anatomical image on paper is conventionally shown as an artist drawing; usually depicted as follows in [Exhibit 1](#)

**EXHIBIT I**



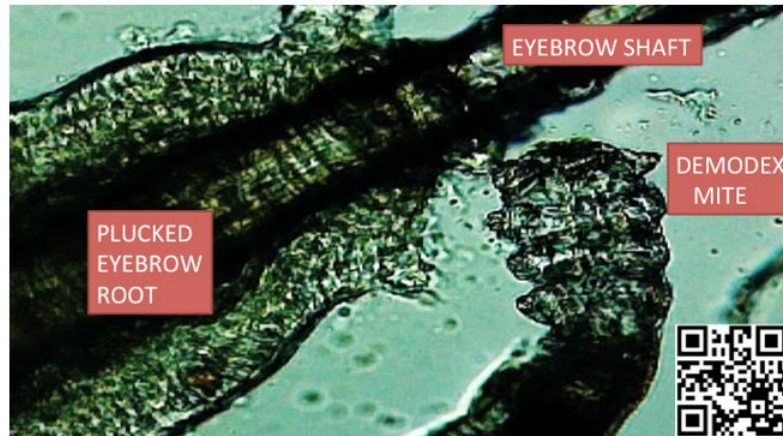
**EXHIBIT 1** The human hair anatomical image

**2. VIDEO MICROSCOPY IMAGE**

The Attracting Property of Hair Shaft/Skin Junction Environment

Unpublished Image showing skin parasite attracted to human eyebrow hair shaft/skin junction.

**Figure 1**



**Figure 1** Skin Parasite Attracted to Human Eyebrow Hair Shaft/Skin Junction

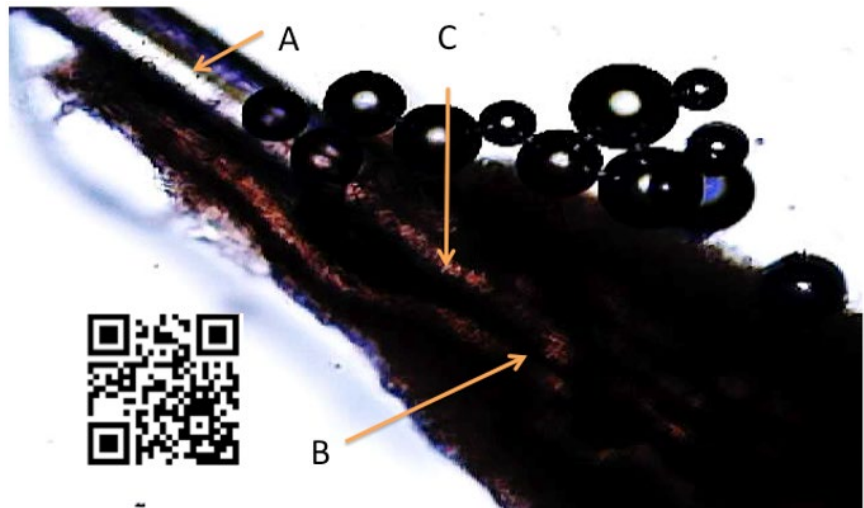
**Figure 1** Incidental finding Microscopy image magnified x40. Skin parasite found (Mite) found while doing catalase research. Plucked one of my eyebrows, mounted in microscope and there it was living at the shaft/skin junction. For details link to: <https://youtu.be/YBdJqhF9QI0>

Or Scan QR Code in lower right corner of image.

### 3. DEMONSTRATION OF THE PRESENCE OF ANTIOXIDANTS IN THE HAIR INFUNDIBULUM

The attraction of H<sub>2</sub>O<sub>2</sub> molecules in water being attracted into the hair infundibulum, them broken down by antioxidants in the infundibulum into H<sub>2</sub>O and O<sub>2</sub> molecules. Figure below showing O<sub>2</sub> molecules exiting hair.

**Figure 2**



**Figure 2** O<sub>2</sub> molecules exiting hair

**Figure 2** Demonstration of antioxidants breaking down H<sub>2</sub>O<sub>2</sub> in infundibulum. Microphotograph of video. Plucked scalp hair immersed in water with H<sub>2</sub>O<sub>2</sub> molecules. A= Hair Shaft B= Oxygen Bubbles from H<sub>2</sub>O<sub>2</sub> decomposition by catalase C= Hair Follicle Infundibulum

For additional details link to <https://youtu.be/09tYp348jKM>. Or scan QR Code in left side of image.

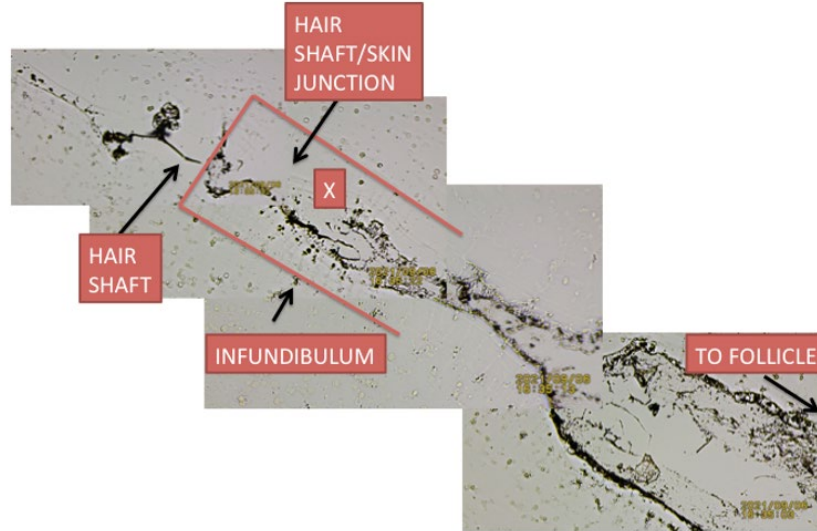
Image reproduced from: Abraham Embi. The secondary role of UV light in swimmer's melanoma genesis. *Int J Mol Biol Open Access*. 2018;3(3):121-123. DOI: 10.15406/ijmboa.2018.03.00064

Images below **Figure 3** supplemental information obtained while researching the hair follicle bio magnetic imprint. See citation below.

## 4. HUMAN HAIR HAIR BIOELECTRIC IMPRINT

### 4.1. PLEASE NOTICE DIFFERENCE WHEN COMPARING WITH EXHIBIT I

Figure 3



**Figure 3** Scattered Bioelectrical Activity in Infundibulum

**Figure 3** Distal hair bioelectric magnetic imprint showing scattered bioelectrical activity in infundibulum. X: Notice scattered bioelectrical activity in area surrounded by red lines (infundibulum). This activity is in support of the presence of antioxidants.

How to obtain a bioelectrical imprint of the hair is fully explained by linking to:  
Embi AA. Introducing Gap in Hair Follicle Electromagnetism as Proposed Mechanism for The Presence of Bipolar Electrical Charges Inherent in The Human Hair Shaft. DOI 10.29121/granthaalayah.v9.i9.2021.4260

## 5. THE QUESTIONS ARISE:

- 1) Why are microbes and parasites attracted to the human hair shaft/skin junction? Are antioxidants attracting parasites?
- 2) Does the presence of a Bioelectromagnetic environment is a factor in the attraction?
- 3) Is hair follicle inflammation as in alopecia caused by microorganisms reacting to antioxidants present in the infundibulum? After all some diseases such as esophageal reflux are caused by helicobacter pylori.
- 4) Further research is highly recommended!!

## CONFLICT OF INTERESTS

None.

## ACKNOWLEDGMENTS

None.

## REFERENCES

- Embi, A. A. (2018). Introducing Antioxidants As Essential For The Maintenance Of Tissue Life As Demonstrated In Human Hair Follicles. *International Journal of Research - GRANTHAALAYAH*, 6(7), 263-271. <https://doi.org/10.29121/granthaalayah.v6.i7.2018.1305>
- Embi, A.A. (2018). Hair and blood endogenous low level biomagnetic fields cross-talk effects on fibrin inhibition and rouleaux formation. *IJGR*, 2018 6(11), 200-208. <https://doi.org/10.29121/granthaalayah.v6.i11.2018.1118>
- Embi, A.A. Jacobson, J.I. Sahoo, K. Scherlag, B.J. (2015). Demonstration of Inherent Electromagnetic Energy Emanating from Isolated Human Hairs.
- Embi, A.A.B.s. (2018). Compatibility Of Biomagnetic Profiles Found In Living Matter By Cross Species Demonstration. *International Journal of Research - Granthaalayah*, 6(8), 84-92. <https://doi.org/10.29121/granthaalayah.v6.i8.2018.1264>
- Levin, M. (2014). Molecular bioelectricity : How endogenous voltage potentials control cell behavior and instruct pattern regulation in vivo. *Molecular Biology of the Cell*. 25 (24). <https://doi.org/10.1091/mbc.e13-12-0708>
- National Library of Medicine (2019). What is the structure of hair and how does it grow ?
- Scherlag, B.J. Sahoo, K. Embi, A.A. (2016). Novel and Simplified Method for Imaging the Electromagnetic Energy in Plant and Animal Tissues. *Journal of Nanoscience and Nanoengineering*, 2(1), 6-9.
- Schneider, M.R. Schmidt-Ullrich. R. Paus, R. (2009). The hair follicle as a dynamic miniorgan. 19(3). <https://doi.org/10.1016/j.j.cub.2008.12.005>