Carnicom Institute Research

2012

Acknowledgements

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MORGELLONS AND RECENT FINDINGS

MORGELLONS AND RECENT FINDINGS:

PART I : MORGELLONS : A REVERSAL STRATEGY

PART II : PROTEINACEOUS FORM IDENTIFIED

PART III : DIMORPHISM, SYMBIOSIS OR DESIGN

PART IV: MAGNETIC PROPERTIES OF THE GROWTH FORMS

PART V : DNA EXTRACTION

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PART VIII : CONFERENCE VIDEO EDITING PROJECT

PART IX : CULTURE GROWTH RATE IMPROVED

PART X : ELECTROPHORESIS PROCESS BEGINSPART

XI : ANOTHER POSITIVE TEST METHOD FOR IRON (Fe+3) IN THE CULTURE

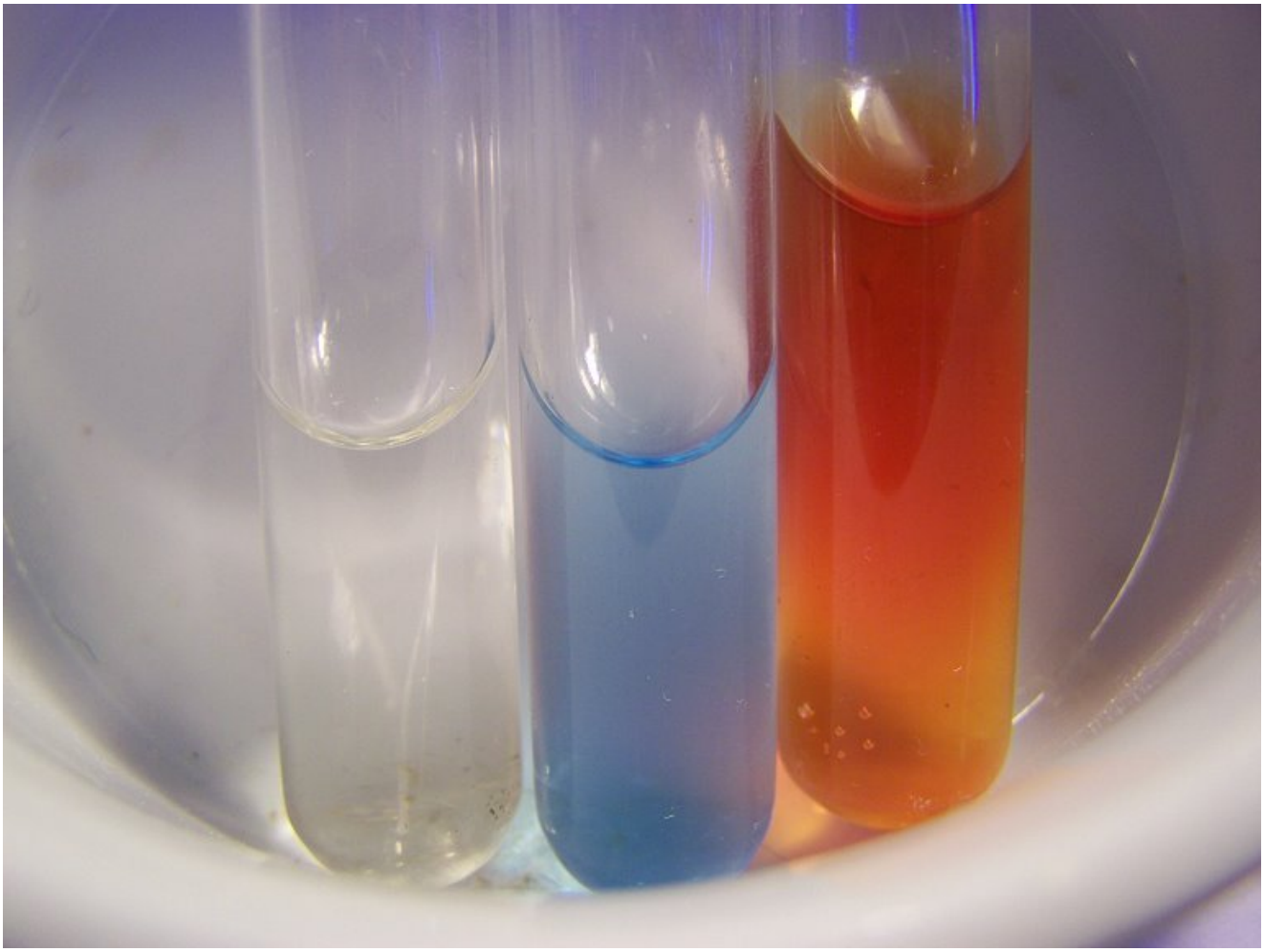
IN PROGRESS
Estimated Completion Date : Can Not Be Estimated At This Time

Clifford E Carnicom
Jan 2012

Note: I am not offering any medical advice or diagnosis with the presentation of this information. I am acting solely as an independent researcher providing the results of extended observation and analysis of unusual biological conditions that are evident. Each individual must work with their own health professional to establish any appropriate course of action and any health related comments in this paper are solely for informational purposes and they are from my own perspective.

PART I : MORGELLONS : A REVERSAL STRATEGY (Dec. 18, 2011)

A viable and tangible strategy to disrupt the growth process of the Morgellons condition, as it exists within the culture form that has been developed, has been established. This strategy involves the breakdown of certain chemical bonds within an identified proteinaceous complex in a manner that is not harmful to the human body. The reduction strategy also includes the release of iron that is held within the proteinacous complex in a chelated form. This strategy has been established with confidence and a repetition of results. The current work will be applied next directly to oral human samples. Much time, energy and resources will be required to further investigate, verify and apply this strategy. The preliminary results and the theories are promising at this stage.



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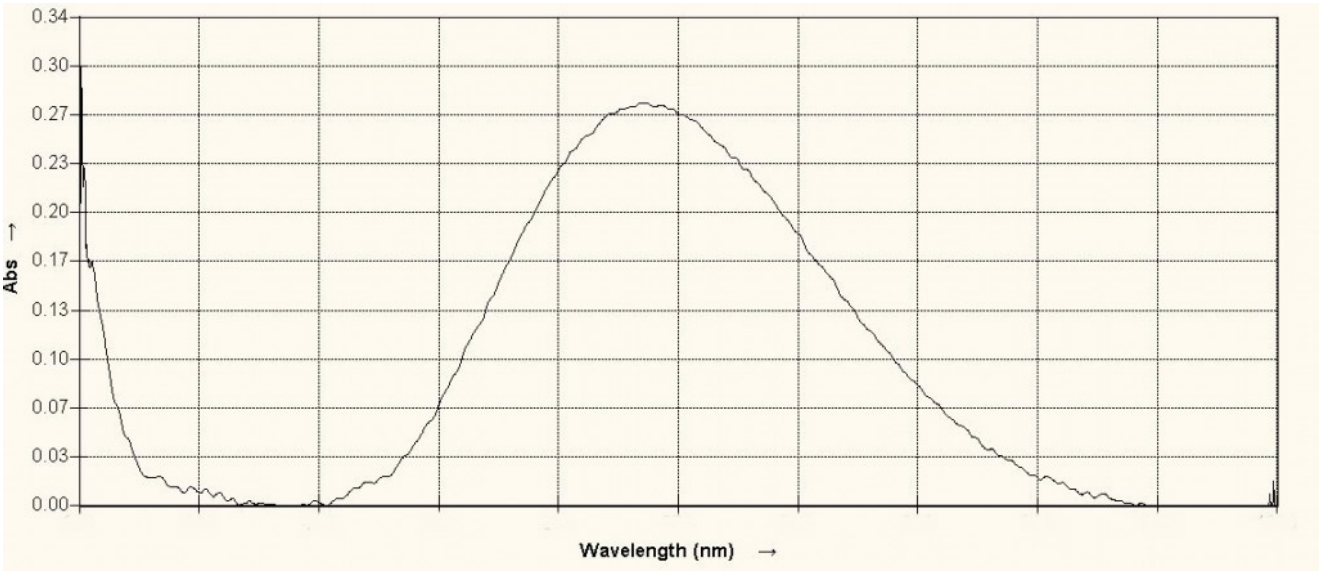

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PART II: PROTEINACOUS FORM IDENTIFIED

A note to the staff of the Institute tonight (Dec. 2, 2011); this will give some idea as to some of the work in progress…

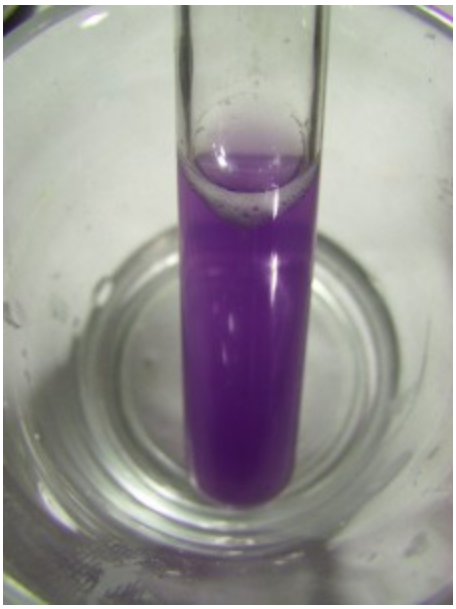
The existence of a protein within the culture growths has now been established with confidence tonight. I had to do work to eliminate questions of potential contaminants that might have distorted the results. It is also a process of much patience with chromatography, literally drip by drip over many days for each test that is set up. It has taken about 1 1/2 to 2 months to get to this point.

Existence of a protein is eventually of equal importance as that of the iron work. We now have iron and the protein as two primary and identified constituents. This work will raise more questions that it answers, but we need to live with this for now until future means and equipment and methods work their way in. One more reliable way of putting a stop to this fellow is to truly understand the biochemistry and the life cycle of growth; there is then a better chance of interfering with that cycle in a known manner.

The existence of a protein means there is DNA behind it. As you can imagine, the work has actually just begun if we can get these means. Next questions would be what type of protein, what is the function of the protein(s), sequencing of the proteins, etc. Right along with it would be the isolation of DNA, electrophoresis work, etc. An infra-red spectrophotometer would be a very useful piece of equipment for us on an ongoing basis – we are having to work very hard to get certain results that would be more apparent with the right equipment.

I may put this comment on the paper to get the process started, otherwise I have so many to write I will never get to any of them at the current rate…

A positive Biuret protein test result using a separation of elute from the chromatography column. The sample material is based upon a culture from oral filaments. The original extraction from the chromatography column is to the left; the positive Biuret result for the existence of a protein is shown on the right with the purple color. Successful separation on the column has been achieved using various combinations of solvents in combination with a stationary phase



A positive Biuret test result using whey (lactoferrin) protein for control purposes. A positive test results in the purplish color shown above. The Biuret test depends on a copper complex that forms between the protein (peptide bonds) and copper sulfate and an alkaline solution, such as sodium hydroxide.

PART III: DIMORPHISM, SYMBIOSIS OR DESIGN

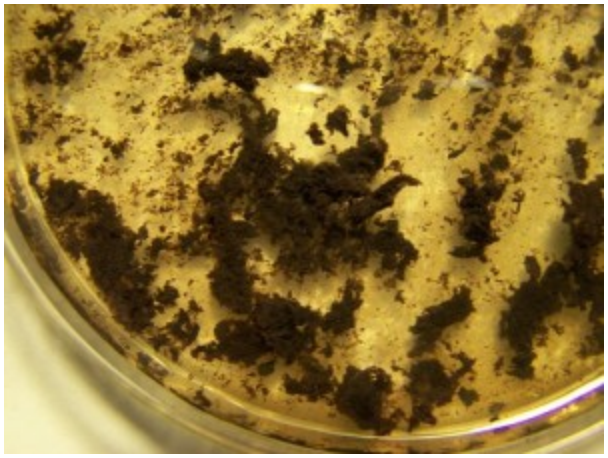
The morphology, metabolism and life cycle of the “Morgellons” organism, as defined by this researcher, is increasingly being understood. There are now three scenarios that can be provided that encompass the majority of the understanding that has been achieved.

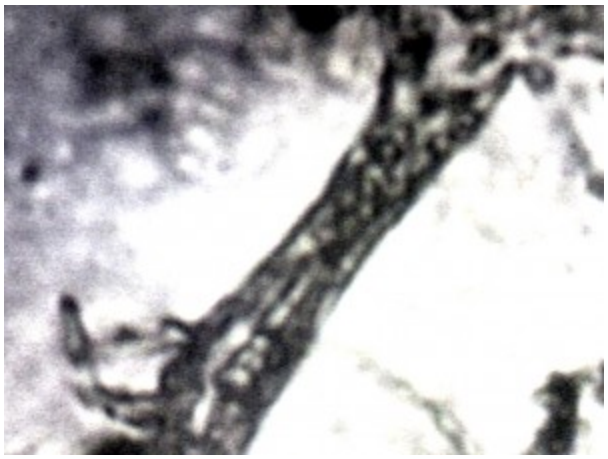
The first of these examines a similarity of form, at least in part, to a dimorphic fungal-like organism.

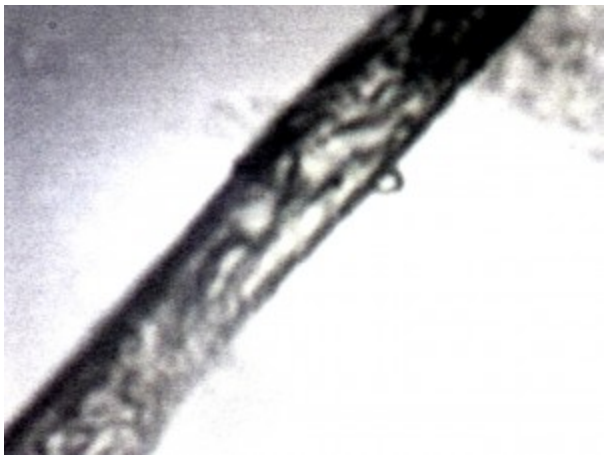
The second considers the joint existence of bacterial-like and fungal-like organisms in a symbiotic relationship.

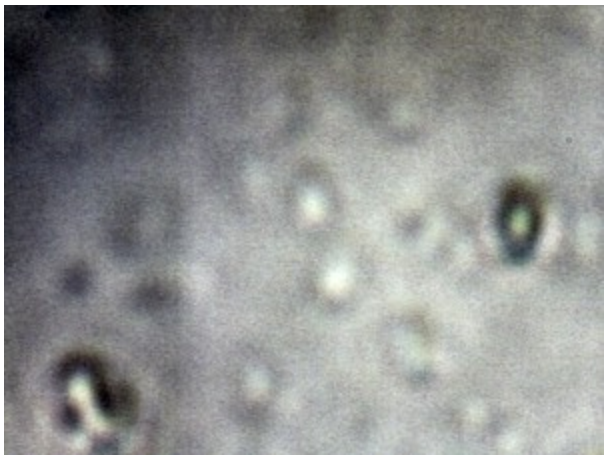
The last raises the spectre of a genetically created or designed organism.

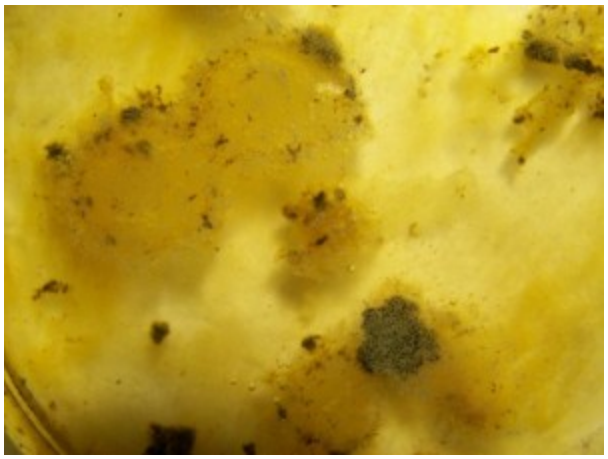
Each of these scenarios has certain strengths, weaknesses and probabilities of occurrence. There can also be a degree of overlap between these alternative interpretations. This paper will discuss what has been discovered, within these three scenarios, that helps us to potentially define the nature of this unusual organism.

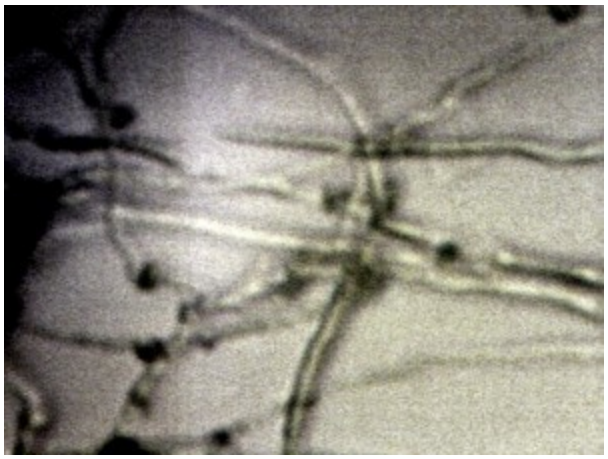


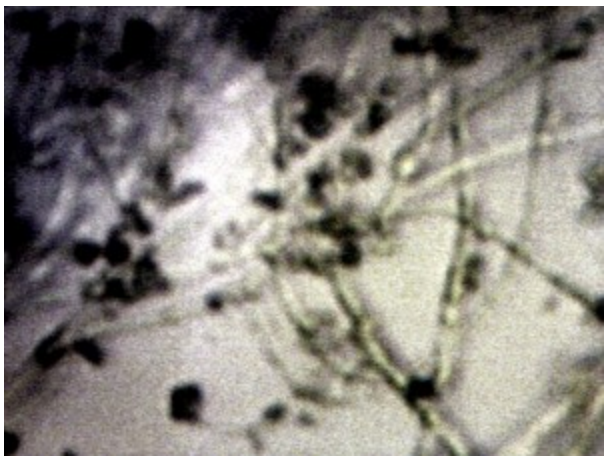


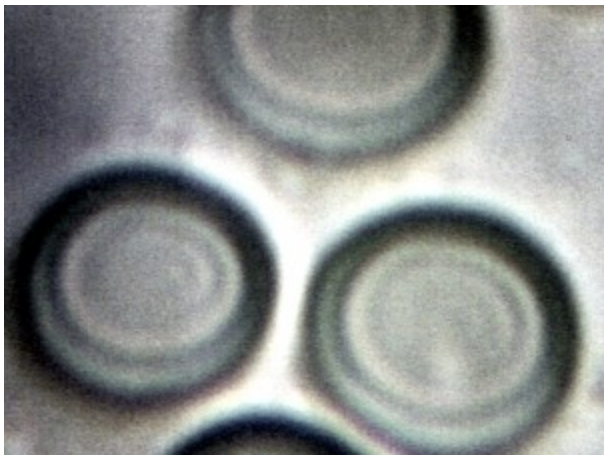


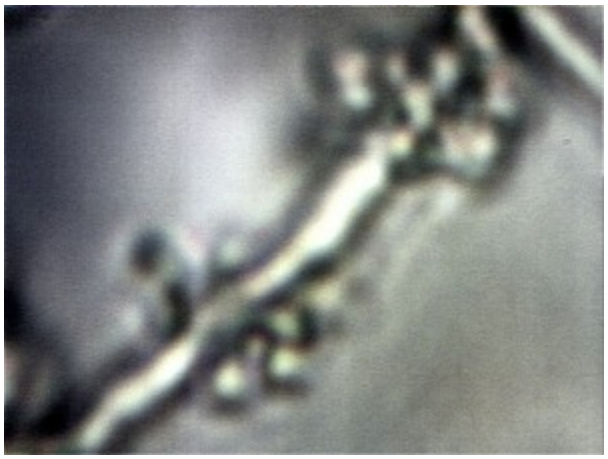


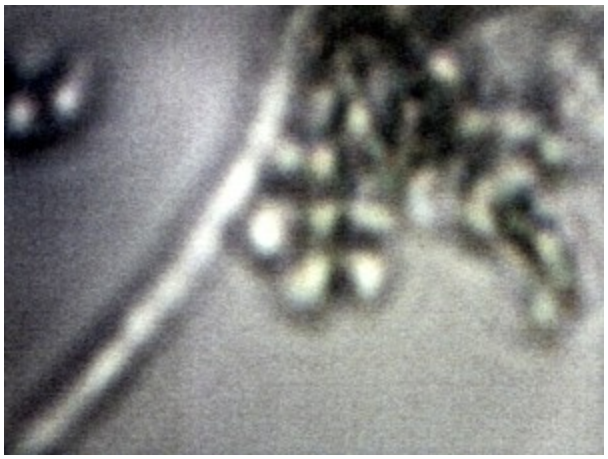










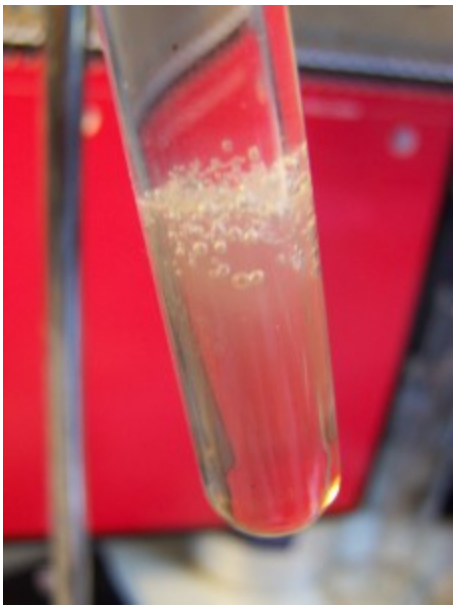


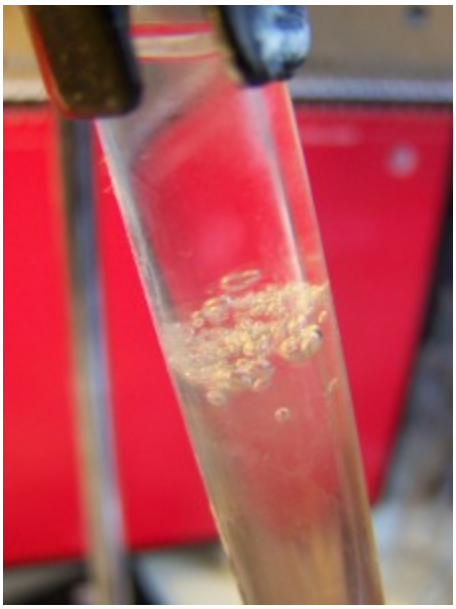
PART IV: MAGNETIC (ELECTROMAGNETIC) PROPERTIES OF THE GROWTH FORMS:

The magnetic (and consequently, the electromagnetic) properties of the primary Morgellons growth form are now proven in a direct fashion. The video segments below show the response of both the culture derived form and the oral sample to a strong magnetic field. These demonstrations will call into consideration each of the papers written on the subject of electromagnetics by this researcher. One such topic will be the extended research that has been done that reveals the ambient presence of unaccounted Extremely Low Frequency (ELF) energy over a testing period of several years. The human electromagnetic system operates primarily within the ELF portion of the electromagnetic spectrum. The sensitivity and response of the Morgellons growth form to the electromagnetic spectrum is another of the many primary fields of research that requires funding, resources and skilled personnel to complete. The identified presence of iron and ferromagnetic compounds within the growth forms establishes the basis of this future research, along with the direct demonstration of the magnetic response shown below:

To be continued.

PART V: DNA EXTRACTION



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PART VI: THE SERBIAN SAMPLE

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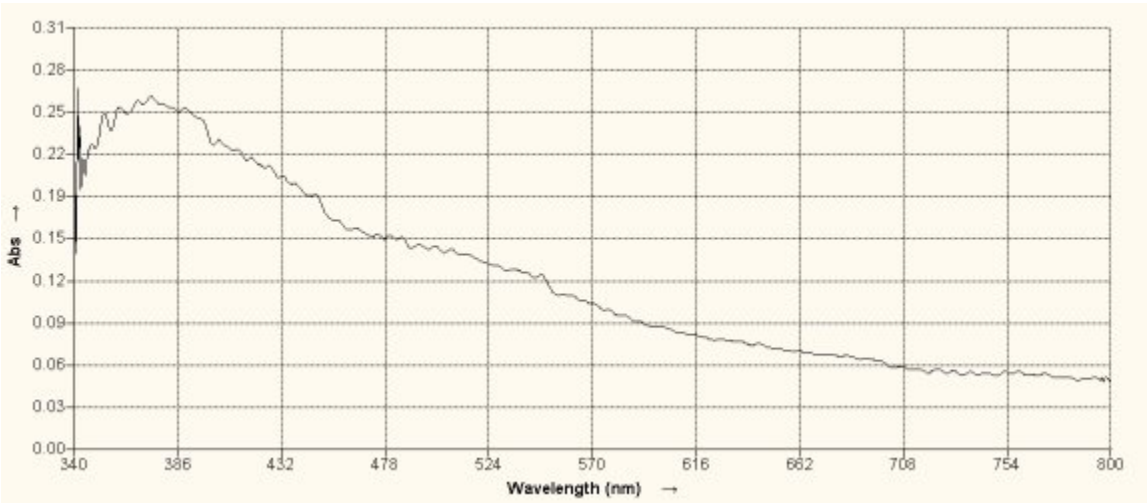

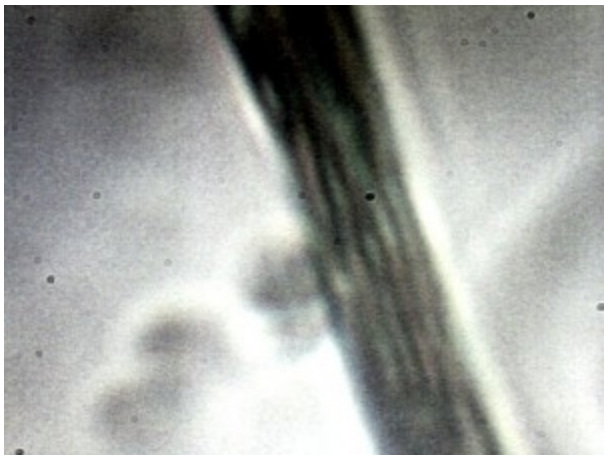

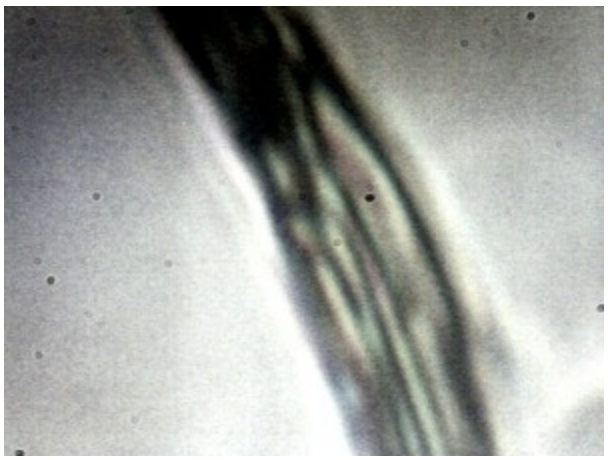

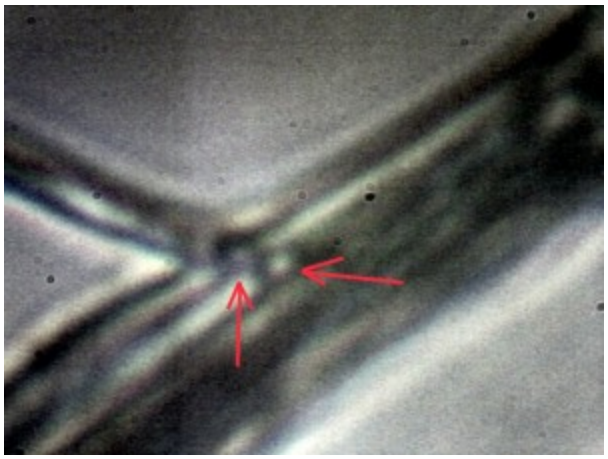

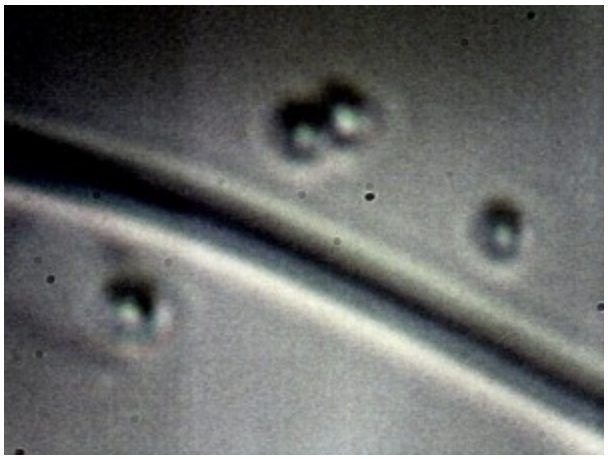

PART VII: COLUMN CHROMATOGRAPHY

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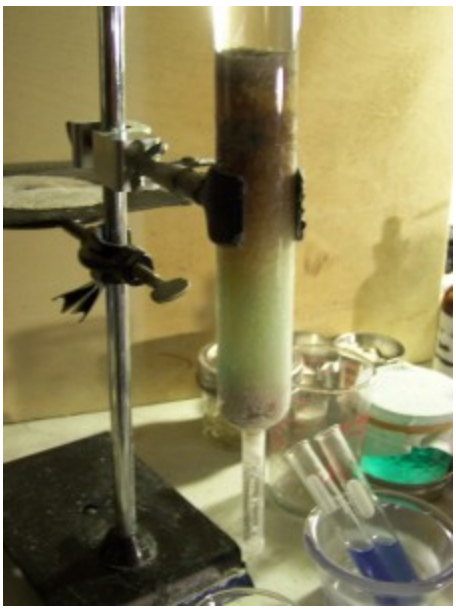


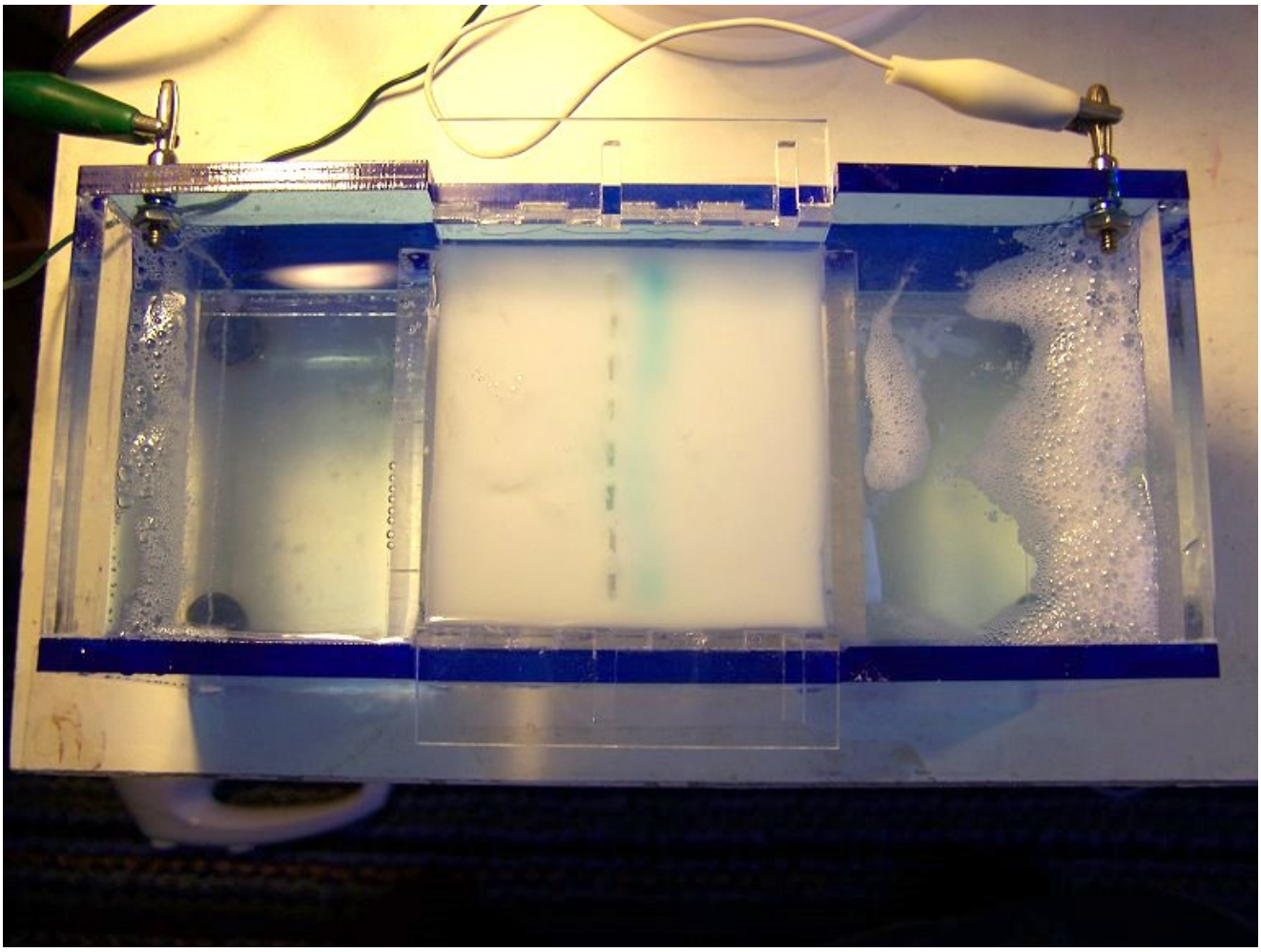
PART VIII : CONFERENCE VIDEO EDITING PROJECT

To be continued.

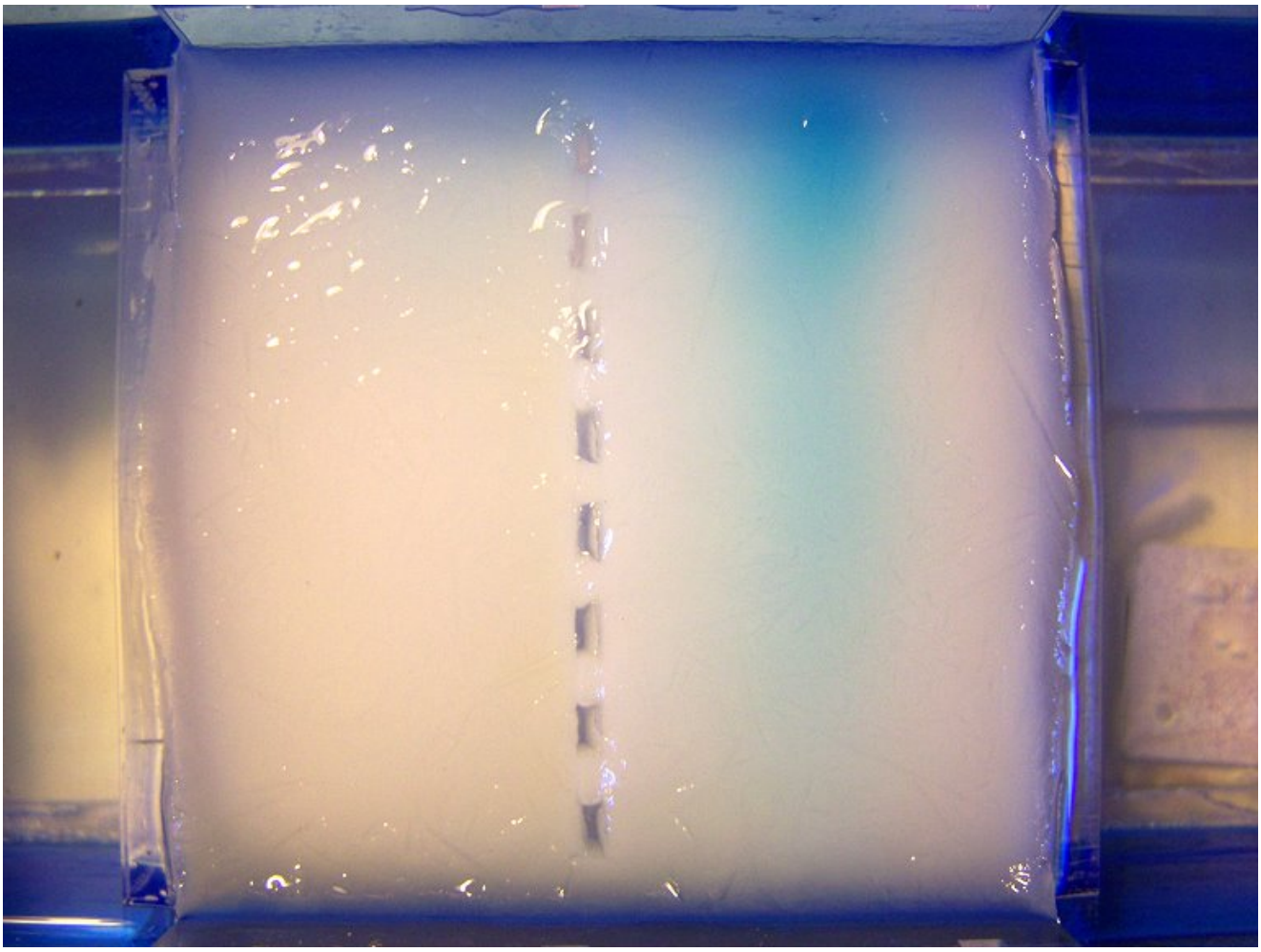
PART IX : CULTURE GROWTH RATE IMPROVED

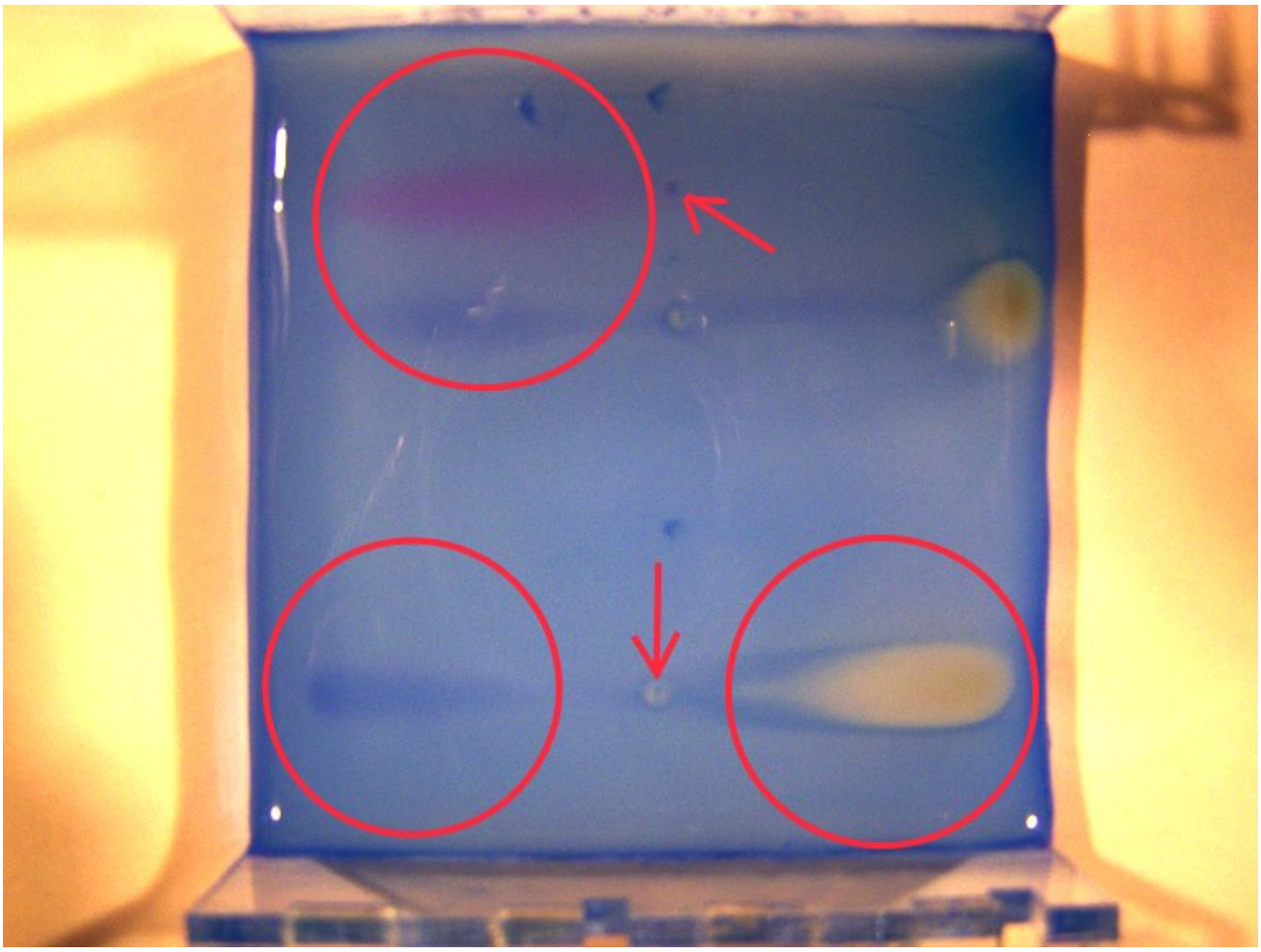
To be continued.

X : ELECTROPHORESIS PROCESS BEGINS



Starch Gel Electrophoresis Applied to Proteinacous Samples : Initial Tests Underway





Starch Gel Electrophoresis : Trial Runs of Test Dyes and Blood Sample. Left photograph shows methylene blue dye migration towards the negative terminal. Arrows on right photograph depict origins of placement. Blood sample shows both positive and negative charged protein component separation at lower portion of right photograph. Eosin test case on upper left of right photograph; migration toward positive terminal Methods remain under development; no successful separation of presumed culture based proteinacous component at this time.

To be continued.

XI :ANOTHER POSITIVE TEST METHOD FOR FERRIC IRON (Fe3+) IN THE CULTURE

Another test method has been developed to detect and establish the presence of iron in the Fe3+ state within the culture growth that is based upon the oral samples. The test is positive. The further significance of this test is that it has been applied directly to the proteinaceous complex that has been extracted from the culture with the use of column chromatography. This further substantiates the case that the proteinaceous complex itself contains iron in the ferric state and that this iron is bound to certain amino acids that are

under examination as candidates. It will be possible to determine the concentration of the iron within the proteinaceous complex through spectrometry. The test is based upon the use of ammonium thioglycolate.

Clifford E Carnicom
(born Clifford Bruce Stewart Jan 19 1953)

Morgellons Research: Proteinaceous Complex Identified

Morgellons Research:
Proteinaceous Complex Identified

Clifford E Carnicom

Mar 14 2012

This paper is subject to edits.

Note: I am not offering any medical advice or diagnosis with the presentation of this information. I am acting solely as an independent researcher providing the results of extended observation and analysis of unusual biological conditions that are evident. Each individual must work with their own health professional to establish any appropriate course of action and any health related comments in this paper are solely for informational purposes and they are from my own perspective.

A proteinaceous complex that derives from oral filament cultures has been identified. This finding, along with the significant presence of iron within the same culture growths, is paramount in the understanding of the physical nature of the filaments characteristic of the condition.

The method of determination of this complex has been protracted and difficult, primarily because of the lack of resources that are available to achieve a more direct knowledge of composition. The work has been conducted over a period of several months, and the results have been arrived at through a combination of deductive methods, qualitative chemical tests, column chromatography, analytical chemical separation techniques, and visible light spectroscopy. Methods of thin layer chromatography, distillation and electrophoresis have also been included. Additional resources, should they become available, can hasten the process of discovery which remains in midstream. This declaration itself has been on hold for more than two months, until the opportunity of presentation has afforded itself.

To give an example of the importance of protein discoveries, the success in curtailment of harm from the AIDs virus has been accomplished largely from the massive efforts that have been made to understand the protein complexes involved. Proteins, upon discovery of uniqueness, are themselves patentable and are the basis of much of the pharmaceutical industry. This exists as a controversial subject in its own right. With the proper equipment and resources, many of the questions and problems posed by the topic of this paper could be answered directly and promptly.

Proteins are classically designated as the “building blocks” of nature. It is quite common for approximately one-half of the composition of an organism to be of proteins. Understanding this aspect of the filament nature of the Morgellons condition is obviously of the highest

priority of any biochemical research project; to date, however, this information has been essentially non-existent or scant.

A recent report by the Centers for Disease Control (CDC) raises the ante of this controversy by themselves declaring a significant percentage of the materials studied to be composed of proteins. The report subsequently proceeds to ignore any direct presentation of laboratory results and strategically uses terms such as “likely” and “similar” versus a direct presentation of chemical composition to the molecular level, as is required. The report also eventually leads to a pre-directed “conclusion” that transforms the physical presence of these proteins into the metaphysical world and classifies the manifestation of this physical and laboratory presence as a continuing “delusional” condition.

As another illustration of the inexcusable delay and failings of this report, let it be known that when a critical and unexpected health situation arrived on the scene some time ago, namely the Hantavirus crisis, the CDC had the issue contained, sourced and identified within a couple of weeks of investigation. Six years later, several hundred thousand dollars more, in question of collusion with the Armed Forces of Pathology, and we remain at the same and exact original point of agenda driven policy. This shirk from proper investigation and disclosure of factual results is a disservice to the public welfare, benefit, interest and health.

Suffice it to say that the objective of the scientific method is to test and resolve a hypothesis, and that it is not to “generate hypotheses” as a primary goal. Such thinking is to encourage the arena of speculation and obfuscation versus resolution, which is exactly what has been accomplished with the recent report. This is not science. The reader is requested to read the report from a analytical, objective, scientific and critical thinking perspective and not to be duped by the vagaries and critical exclusions that are apparent within the so-called “report.” The ludicrousness of the CDC report and the abject failure to adhere to the principles of scientific resolution will not be discussed further here.

This researcher will now proceed, from a base of limited resources, to describe the laboratory results that derive from the efforts of the Carnicom Institute. The writer fully acknowledges that many difficulties remain and that many questions remain unanswered. Certainly some very specific information desperately needed can not be had at this point. The writer allows for the possibility of error and insists that further verification or refutation of the work is required. It is, nevertheless, the state of knowledge apparent at this time.

The most succinct description of the proteinaceous complex that can be provided at this time is as follows:

An apparent metalloid dipeptide complex, likely composed of an coordinated ferric iron (III) complex. The amino acid cysteine appears to be dominant in the composition. There is also evidence emerging for the presence of histidine. The most likely dipeptide forms are

therefore cysteine-cysteine (i.e., cystine form) or a cysteine-histidine iron dipeptide complex. Additional amino acids will remain a part of the investigation, as well as the variability in the spectrums as a function of pH.

There may be error within this assessment of the nature of the complex, but it is believed at this point to be an accurate statement. There are intellectual property issues that may at some point become involved with the statement made above. The Institute is fully aware of the importance of, and economic value of, protein identification and potential discovery. The Institute at this time, however, does not possess the means or resources to evaluate the complex at the molecular level, which is required. Equally, the means to pursue patent interests or protection does not exist and pharmaceutical interests may eventually emerge. The Institute will instead place its focus on the disclosure of information that serves the public benefit and welfare, such that further and needed urgent research can take place. The Institute is on record as opposing any proprietary developments that may develop from this research without the involvement of the Carnicom Institute. The public health interest and welfare is to remain as the paramount goal.

Let us discuss the methods by which this conclusion has been made. In all, more than a half dozen different techniques or methods have been used to arrive at the above statement. These are:

1. Extended observation and analysis of a column chromatography process of separation of the protein complex from a prepared culture solution. In particular, the interaction of the culture with copper salts became an important factor in the process of identification.

2. The use of the qualitative biuret test for proteins.

3. Spectral analysis of a control solution of a dipeptide compared to the spectral analysis of the proteinaceous complex under study.

4. The use of ninhydrin applied to a solution of the complex on filter paper and then heated.

5. The reactions of a control set of amino acids, by color, upon heating in a ninhydrin solution.

6. The spectral analysis of the same set of control amino acids mentioned above.

7. The behavior of the proteinaceous complex when subject to N-acetyl cysteine and ninhydrin.

8. A positive test for the existence of iron after reduction by N-acetyl cysteine.

9. A spectral comparison of the amino acid cysteine with the proteinaceous complex under the condition of reduction and in combination with a heated ninhydrin solution.

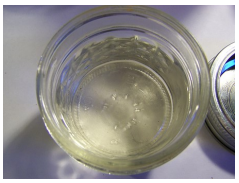
Let us briefly describe each of these factors to gain a better understanding of how the assessment has been achieved. A strong reliance on a series of photographs will be made to summarize the complex process that is described above.

A chromatography column in operation.

1. Column Chromatography:

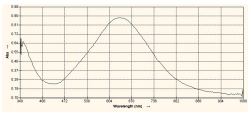
A great deal of time and effort has been devoted to the development of column chromatography methods and techniques as it applies to the decomposition problem. Column chromatography is a method of separation of a mixture into various constituent components. A great deal of trial and error is required to develop a successful column. This has been achieved with a fair degree of reliability at this point in the research.

The specific details of proteinaceous eluate extraction will not be described in detail here. Many combinations of solvents, salt solutions, and adbsorbents have been used to eventually produce the proteinaceous eluate under study here. What can be stated is that a particular reaction of the culture solutions with copper salts is indeed of high interest. It will be found that blue copper protein compounds can be formed with the proper combination of the culture solution, copper salts. solvents, and adsorbents (stationary phase). The blue copper proteins have particular chemical compositional qualities, a majority of them that involve the amino acids of cysteine and histidine (Type I Blue Copper Proteins). This phase of the research was the first indication of specific amino acids that may be involved in the composition, and it led to an early interest in the specific amino acids of histidine and cysteine as a part of the composition.



The proteinaceous eluate extracted from the chromatography column. It requires approximately two weeks of column chromatography to produce this volume.

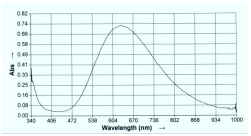
2. The Biuret Test is an important test for the existence of proteins and peptide bonds. It can be used in both a qualitative and a quantitative sense. The test indicates the presence of peptide bonds, which are the basis for the formation of proteins. The classic test for the presence of peptide bonds is the presence of a purple color, as is shown here. A superficial examination of the literature will indicate that the Biuret Test can only be used to detect peptides with three or bond bonds present; i.e., a tripeptide or larger, and this will result in the purplish color shown. A dipeptide bond, however, has only two peptides that are joined together. A deeper search in the literature will reveal that the Biuret Test will indeed respond to dipeptide bonds, but that there will be a shift to a longer wavelength in the spectrum (ie., a shift towards the blue). With careful examination, this shift in wavelength can be observed in a spectral analysis, and it is critical in determining whether a dipeptide or a longer peptide form is in existence.



A reference and control spectral plot of Aspartame, a dipeptide.

3. The next level of confirmation is to establish that a dipeptide is present in the compound using the methods of spectral analysis in combination with the Biuret Test. An early observation made with the Biuret Test applied to the eluate was that the color observed was shifted toward the blue end of the spectrum compared to the classical Biuret Test.

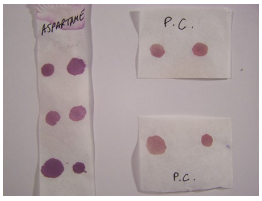
It therefore became necessary to establish a dipeptide control case using spectral analysis. Aspartame serves as such a control, as it is a dipeptide (meaning two peptides joined together). The distinguishing case of the shift in wavelength as referred to in the more exhaustive literature is therefore proven with the reference case shown here. A tripeptide or larger will show the peak at approximately 600 nm; the dipeptide will show the peak shifted to approximately 640 nm. The rise toward 340 nm is also a distinguishing characteristic.



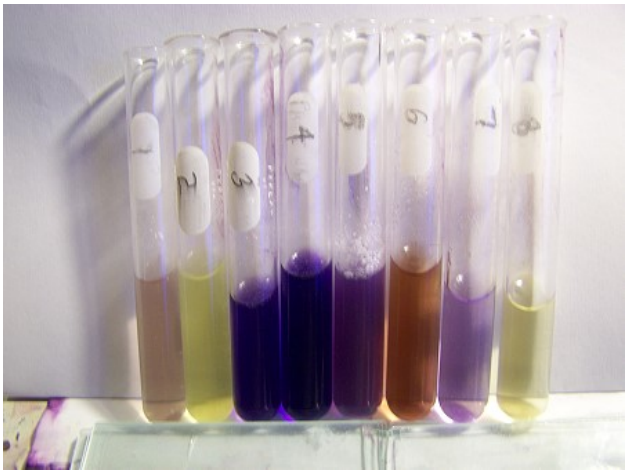
A spectral plot of the chromatography column eluate. The correspondence and match with the reference dipeptide spectrum above is apparent.

The match in the spectrums between the control and the eluate makes the strong case that a dipeptide is a core constituent of the proteinaceous complex under examination.

4. The next level of confirmation for the existence of the proteinaceous complex is with the use of ninhydrin. Ninhydrin is a chemical substance that reacts distinctively in the presence of amino acids and heat. Amino acids turn a characteristic purple and or brownish color in the presence of ninhydrin and heat. The use of ninhydrin is one of the classical means for fingerprint detection in forensic science. The ninhydrin test here proves the existence of amino acids as further confirmation of the dipeptide assessment reached previously through spectral analysis.



A ninhydrin test on aspartame as a control to the left and the same test on the proteinaceous eluate on the right. Both tests are clearly positive for the presence of amino acids.



A reference set of amino acids subjected to a ninhydrin test in solution. Unique and identifiable color spectrums at a specific pH result for each amino acid. pH of the solution is an important variable in the color of the solutions that results. Number 7 in the set is aspartame in solution and number 8 is the solution under examination. The visual agreement with cysteine (number 2) is apparent; spectral analysis confirms this assessment.

5,6. A reference set of amino acids solutions subjected to ninhydrin and heat is created. Unique and identifiable colors spectrums are created for each amino acid. Spectral analysis can now be used to create a set of reference spectrums for the amino acids. Such reference spectrums were created for argenine, cysteine, glutamine, glyceine, histidine, lysine. A reference spectrum was also created for aspartame; a particular dipeptide.

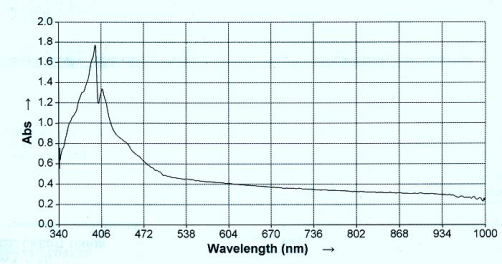
7,8. The first test tube in this set is the proteinaceous eluate. The second test tube is the eluate subjected to the Biuret Test; proving the existence of the dipeptide form (passes spectral analysis test in addition). The third test tube is the Biuret Test case subjected to N-Acetyl cysteine. At this point, the Biuret Test turns clear, indicating that the dipeptide bonds have been broken. When the resulting clear solution is tested for iron in the ferric state (II) the test is positive.

This is an important observation and chemical test result that will be discussed in greater detail in a later report. In summary, however, this test demonstrates the reduction of the dipeptide bonds and the release of free iron in the ferrous state (II).

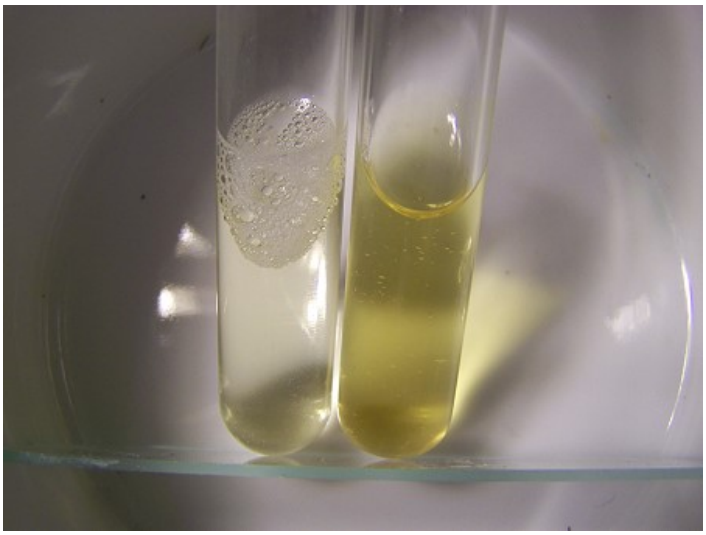
It will also subsequently be demonstrated that the amino acids contained within the dipeptide are now in their free form.

9. The last test to be briefly presented demonstrates the presence of the cysteine amino acid within the complex. When the eluate is subjected to N-Acetyl cysteine, the dipeptide bonds are broken and the iron is released in its free state. The amino acids, now in their free

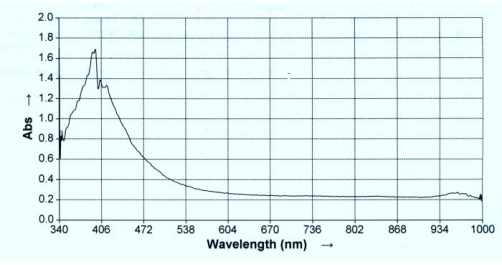
stated, can be subjected to ninhydrin and heat and a spectrum developed. It will be found that the resulting spectrum will match that of cysteine. This rather complex combination of tests and events will lead to the assessment presented earlier that the protein consists of a metalloid dipeptide complex involving iron in the Fe (III) state combined with cysteine amino acids.



A reference spectrum for cysteine after being subjected to ninhydrin and heat.



On the left is a case of the eluate being subject to the Biuret Test (originally blue-purple), then subject to the addition of NAC. The dipeptide bonds are broken and the solution turns clear. On the right, the solution from the previous step is subject to ninhydrin and heat. This produces the yellowish color in the tube to the right. The spectrum of this case is presented at the lower left, and matches that of the reference spectrum for cysteine. NAC with ninhydrin and heat by itself produces no such color reaction or spectrum. This result solidifies the assessment of the proteinaceous nature being a complex of both cysteine and iron.



The spectrum of the proteinaceous complex after being subjected to the Biuret Test, N-acetyl cysteine, ninhydrin and heat. N-acetyl cysteine breaks the dipeptide bonds which releases the iron and the amino acids into their free from. When heated with ninhydrin, the spectrum of the amino acid will match that of cysteine as shown above. The spectrum must be taken immediately after removal from the hot water bath with ninhydrin.

Clifford E Carnicom
Born Clifford Bruce Stewart
Jan 19 1953

Morgellons Research Project: Statement of Purpose

Morgellons Research Project:

Statement of Purpose

The Carnicom Institute is embarking on a first of its kind study of the Morgellons condition often referred to as Morgellons Disease. The project will start with a questionnaire process, and this is in progress at this time. Subsequent developments of data collection and/or clinical studies may develop in the future depending upon support and resources.

This research program will not be possible without the public's participation and support. Based on what we already know, we believe that a greater understanding of the Morgellons condition is vital, and must be accomplished for the benefit of all human beings. Honest and legitimate scientific research participation is what we are providing to interested individuals. We hope that you will offer us your help.

This study will be conducted in an anonymous and confidential manner for research purposes only. There will be no medical diagnosis or individual interpretation(s) given. The research project is intended for scientific purposes and the knowledge obtained will be for the public benefit.

Disclaimer: The Carnicom Institute is a not for profit educational and research organization. It serves the public welfare. We do not advocate any particular products, protocols, or therapies related to health or environmental safeguards. The Institute is not affiliated with any political or religious groups.

Amino Acids Verified

carnicominstitute.org/amino-acids-verified/

Clifford E Carnicom

Nov 03 2012

Note: I am not offering any medical advice or diagnosis with the presentation of this information. I am acting solely as an independent researcher providing the results of extended observation and analysis of unusual biological conditions that are evident. Each individual must work with their own health professional to establish any appropriate course of action and any health related comments in this paper are solely for informational purposes and they are from my own perspective.

The existence of certain amino acids, namely cysteine and histidine, as a dominant aspect of the “Morgellons” growth structure, appears to have been verified. This finding, along with that previously recorded on the important role that iron plays from a compositional standpoint, may be a highly important window into the structural framework of the Morgellons condition. It will also be found that deficiencies or disturbances of these particular amino acids correlate highly with symptoms that appear to frequently coexist with the condition, i.e., high oxidation levels and joint pains within the body.

The prospect of this finding was first recorded in March of this year. Sufficient opportunity has been afforded to return to laboratory studies during the past few weeks and the original findings have been confirmed at a higher level. In the interim, a greater understanding of the likely molecular structure and bonding arrangement of the proteinaceous complex has been deduced, or at least hopefully this is the case. Sufficient resources, had they become available at an earlier time, would have rapidly advanced the painstaking studies that have brought us to the current state of knowledge. This state of knowledge remains in the majority, highly unfinished, but it is believed that an important level of progress has likely been achieved under the current work.

The suffering is now deep and widespread amongst many, and haste must be made against the harm to health and spirit that has taken place. Interference (healthful) with the construct of the proteinaceous complex, along with a detailed knowledge of its molecular structure, remain as top priorities for future research. Adequate resources and support dedicated to those efforts will obviously advance those causes further and in due speed.

A brief summary of how this result has been achieved is in order.

The first stage of structural analysis involved the determination of the existence of iron within the growth structure. A comprehensive discussion of the methods used to establish this conclusion are described within the paper, Morgellons : A Thesis.

The second stage of analysis involved the separation of compounds using column chromatography. This work has also been outlined within previous research papers. This work extended over a period of several months and involves a great deal of trial and error in the methods in conjunction with directed study and research. A primary result of this work was the repeated detection of a dipeptide form. A dipeptide is a combination of two amino acids and it represents one of the most primitive forms of protein development. This conclusion was reached with extensive spectral analysis and it required detailed comparisons to such dipeptides as aspartame. The nuances of dipeptide spectral analysis are not easily researched within the available references and this is a topic of interest in its own right. These nuances are not practical to discuss within the objective of this report, but they involve subtle but important shifts in wavelength with the application of the Biuret test.

One of the primary requirements of visible light spectral analysis is that the solution under examination must be colored. This is not a trivial issue, as most organic compounds are colorless. As such, it requires continuous search and investigation to develop methods of coloring the solution in a reaction the the compound under examination. In many, if not the majority of cases, no such transformation is available, period. These difficulties could largely be abated with the availability of infra-red and ultra-violet spectroscopic equipment, but such equipment is considerably more expensive to obtain. The need remains, however, as it has for several years, of more capable analytical equipment to continue these studies. Please contact the Carnicom Institute if you have an interest in this issue and furthering this research.

The need after a dipeptide discovery is to identify the particular amino acids that compose it; it is known that there will be two. Several methods to pursue that goal were investigated, including additional column chromatography work, paper, starch and gel electrophoresis and extensive ninhydrin analysis. Lack of suitable equipment as well as the knowledge and experience base exist as additional limiting factors on the progress with these methods. This work has also been extremely time consuming, laborious and tedious and can be improved upon with suitable resources.

The method eventually developed involves a combination of ninhydrin analysis and visible light spectral analysis. Ninhydrin is a chemical reagent that produces a colored result in the presence of amino acids and heat; one of the well known applications of this reagent is the detection of fingerprints within forensic science. Spectral analysis is a method that has availed itself to the more detailed examination of those color variations to provide unique signatures of various amino acids. Another aspect of this project has been the creation of a set of “reference spectra” using purchased amino acid compounds.

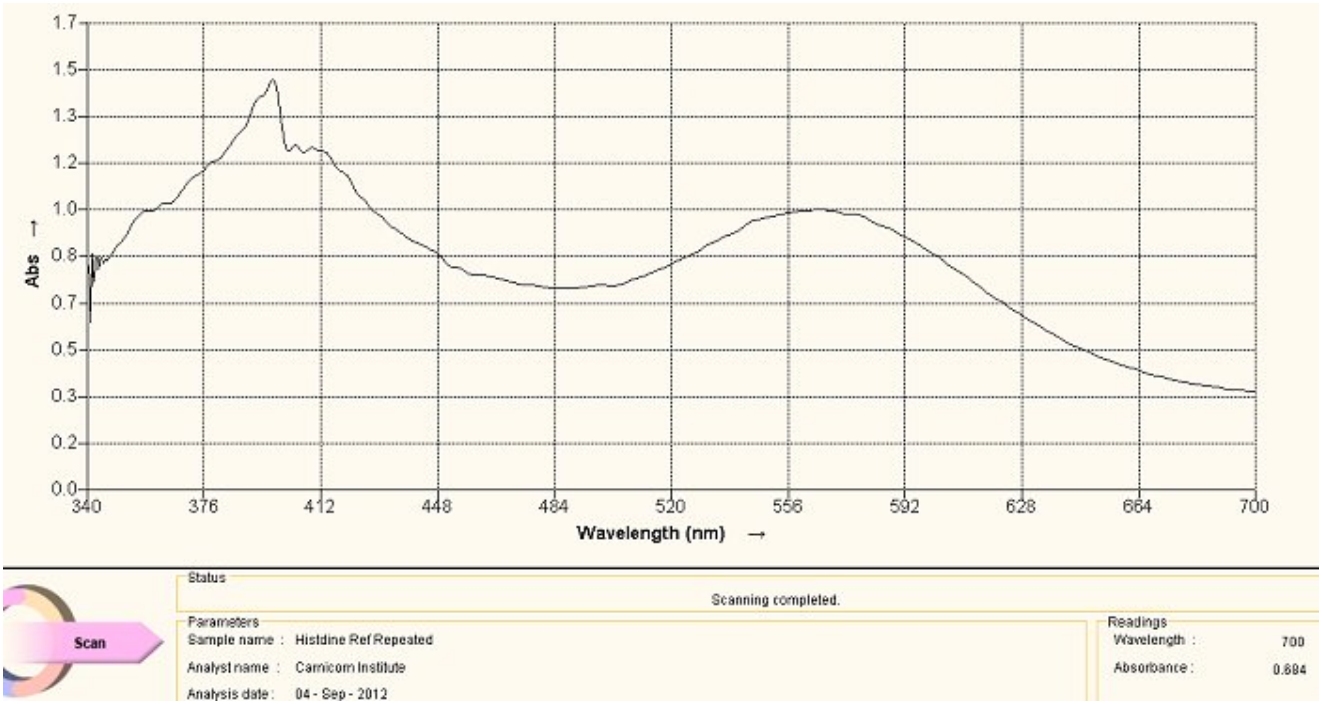
Earlier work made reference to the candidates of discovery being cysteine and histidine within the dipeptide complex. This paper bears out this case, as will be demonstrated further below.

The initial identification used the elute results of column chromatography. The amino acids extracted, after extensive trials and repeat trials, appear to be quite pure at this stage. This work is quite complex and requires a chain of solvents and solutes in combination with time and more time; there remains a great deal of work that can be done here to finalize the successful runs that have been achieved.

The latter method that has been used is to work from the culture extract directly. This method has shown itself to be equally reliable and consistent and it has the advantage of eliminating or reducing the extensive and demanding column chromatography trials. It is, however, fair to say that the column chromatography results have been the cornerstone precursor to the interpretation of the direct culture extract results. The preparation of the culture extract is described to fair detail within another paper on this site, "Morgellons : The Breaking of Bonds and the Reduction of Iron".

Once the methods have been established to identify specific amino acids, the problem then becomes one of simply comparing an observed spectrum to that of a reference spectrum. This is the result that is shown below, both with respect to cysteine and histidine. The identification of the specific amino acids involved is one of the many crucial steps on the path of acquiring specific biochemical knowledge of the growth form's molecular composition. This knowledge then forms the seed to interference and mitigation strategies that are to be developed to alleviate the suffering that is now in place. This same principle is certainly at the heart of most modern medicine. The additional restriction on the current need is that the strategies developed are to be based on improving the health of the body as well as being generally available and accessible to the pubic. The most common utilization of this information occurs in the hands of drug research related companies along with the profit motive at heart; this approach will not serve us well here.

The reference and observed spectrums for cysteine and histidine appear below. The striking similarity and match is apparent in both cases. The peak absorbance wavelengths are the critical points to observe; amplitudes of absorbance can vary fairly widely with respect to concentration levels. Peak absorbance wavelengths are quite unique in the identification of substances and are at the very core of spectral analysis. The uniqueness of the spectra below are self-evident and they form the basis for the identification of the two specific amino acids, cysteine and histidine, within the "Morgellons" growth form.

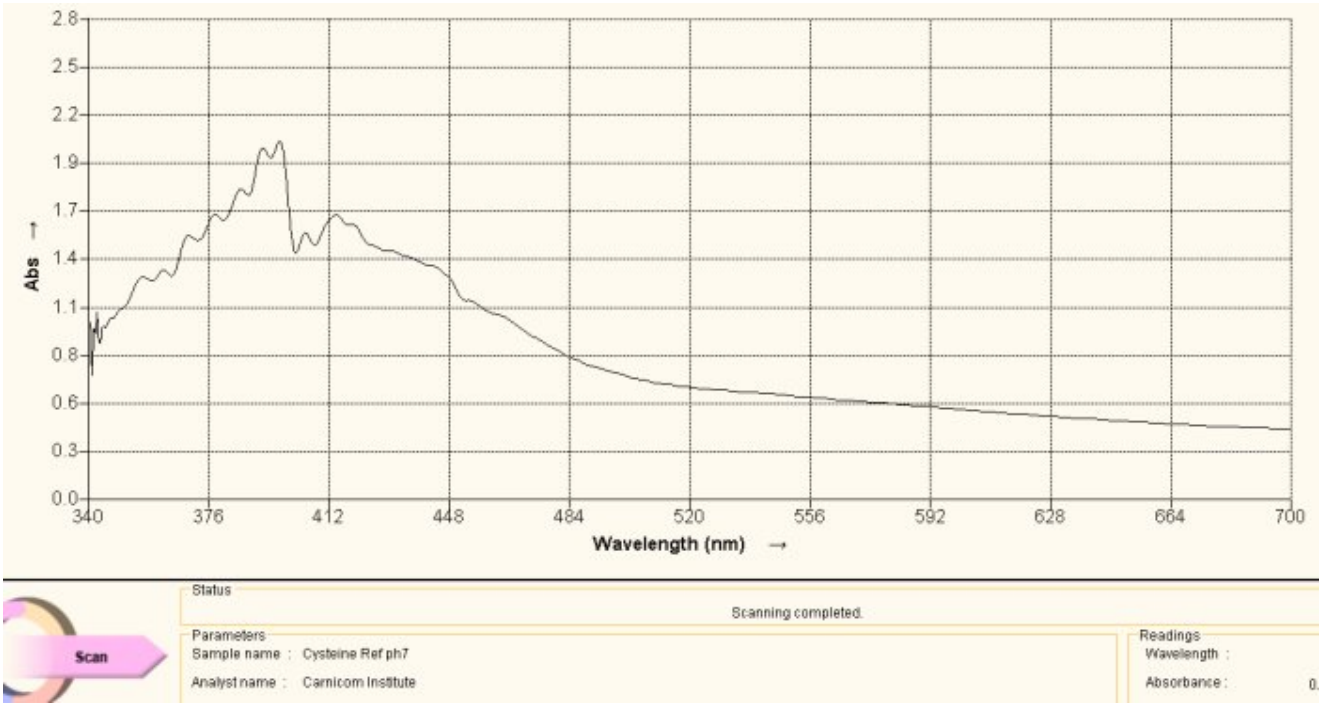


Histidine Amino Acid Reference Spectrum

The above visible light spectrum is a reference graph for histidine, an amino acid. This spectrum was developed from a commercially available supplement form of histidine. The pH of the solution is an important factor in the developing color of the ninhydrin-amino acid complex. The pH of all spectra shown on this page are each developed in an alkaline solution. We notice the dominant peaks at approximately 400nm and at approximately 565nm characterize this spectrum. The method of development for the spectrum is as follows: a small amount (e.g, milligrams) of the histidine in powdered form in dissolved in water. A few drops of ninhydrin solution are then added as well as a few drops of sodium hydroxide solution to alkalize it. The solution is then heated in a water bath, usually for approximately 5-10 minutes. The color of the reaction of the amino acid with the heated ninhydrin in a basic solution will then develop to above. The alkaline solution reference is chosen because of the highly alkaline nature of the culture extracts, as they are themselves subjected to both heat and sodium hydroxide (lye) in the development of the extract.

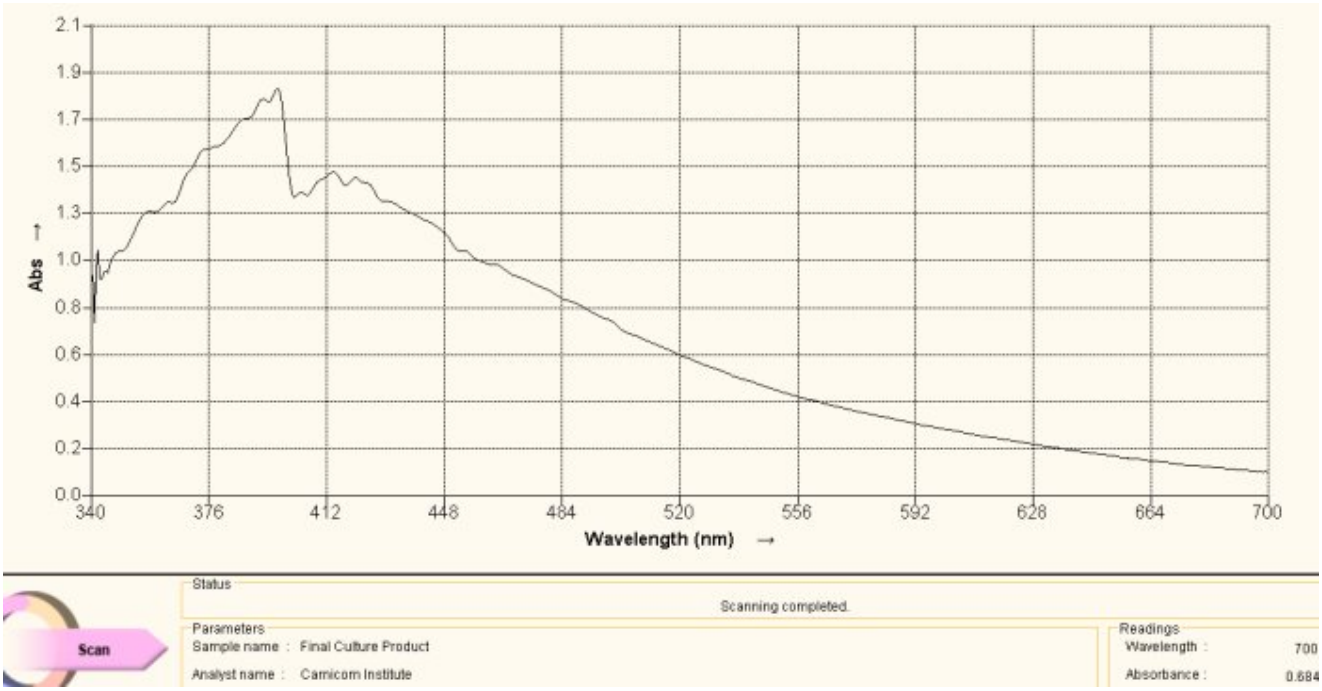
Spectrum Acquired from Oral Filament Culture
(Decomposition of Dipeptide Proteinaceous Complex)

This spectrum above is acquired during the heating of the culture extract-ninhydrin combination. This color is a deep purplish color. The match with the reference spectrum of histidine above is evident, including the dominant peaks at approximately 400nm and 565nm. Spectra can vary substantially in magnitude with respect to varying concentration levels but the maximum absorbance peaks are much more dominant in their appearance. In this case we have essentially matched the spectrum in both magnitude and absorbance peaks. The conclusion from this spectra is that the culture extract itself contains histidine as a dominant amino acid and structural component of the growth form.



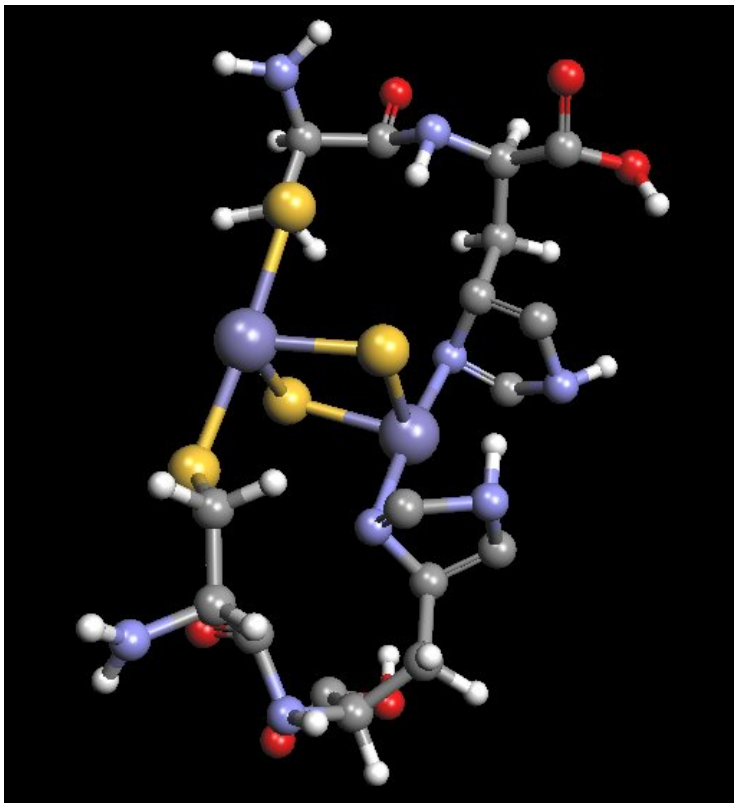
Cysteine Amino Acid Reference Spectrum

The same argument is made in this section as above, with the exception of the amino acid under study being cysteine. Above is a reference spectrum for cysteine, also obtained from a commercial supplement form of cysteine. The preparation and methods of solution preparation are identical to that above. An interesting observation is that heating of the culture over time brings out two different color stages, the first that corresponds to histidine above and the second that corresponds to cysteine shown here. Histidine produces a purplish spectrum in alkaline solution with ninhydrin heat; cysteine produces a yellowish color in alkaline solution with ninhydrin and heat. This observation indicates that the release of the cysteine amino acid requires more energy than that for histidine, and this may be correlated with the disulfide bond strength mentioned elsewhere within recent reports.



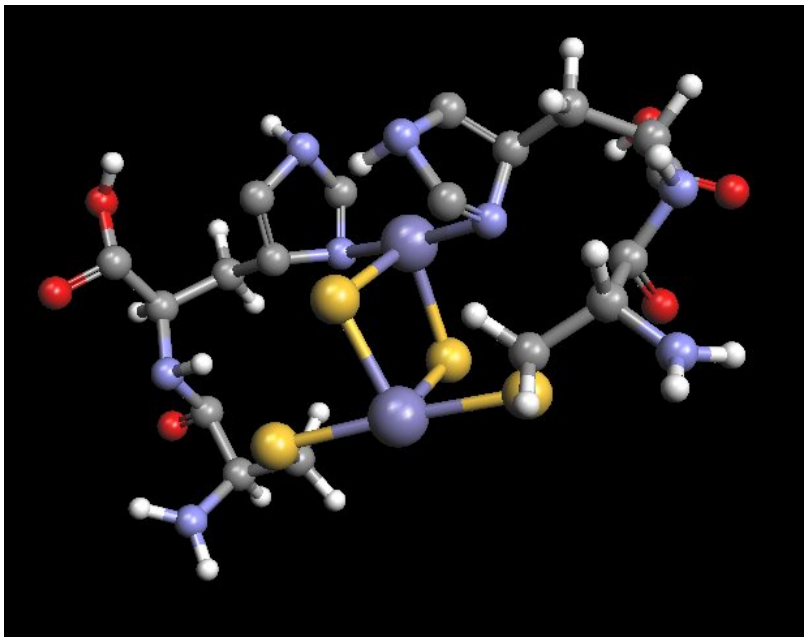
Spectrum Acquired from Oral Filament Culture
(Decomposition of Dipeptide Proteinaceous Complex)

Once again, this is the spectrum obtained directly from the culture extract as subjected to an alkaline ninhydrin solution and heat. The match with the reference spectrum is evident and forms the basis for the second conclusion of this report, i.e., the existence of the amino acid cysteine at significant levels within the growth structure of the “Morgellons” culture that has been repeatedly developed.



Proposed Model of Histidine-Cysteine Proteinaceous Dipeptide Complex
(Overlaps or Parallels Rieske Protein Structure)
Coordinated Iron Complex in Center of Structure

The molecular model shown above is an original proposal for at least some of the structural components of the “Morgellons” culture filament form. It is not to be assumed that this model is final in any fashion, as the equipment to ascertain such work is simply not available at this time. The model has been developed primarily through a combination of extended observation, study and deduction. This model will be found to incorporate a dipeptide structure of both histidine and cysteine. Furthermore, this dipeptide has been extended by duplication in order to accommodate the iron-sulfur complex in the center of the structure. The model is to serve as a basis for further research should the proper equipment and resources become available. If and when the means to delve into molecular biochemistry techniques and equipment become available, this model can then be subjected to further scrutiny and development. The detailed knowledge of this biochemical structure, at the molecular level, is critical to the development of strategies that may potentially interfere with the growth of the organism.



Rotated View : Proposed Model of Histidine-Cysteine Proteinaceous Dipeptide Complex (Overlaps or Parallels Rieske Protein Structure)
Coordinated Iron Complex in Center of Structure

An alternate view of the molecular model that has been developed as a result of the extensive research and study on the “Morgellons” condition.

Morgellons : The Breaking of Bonds and the Reduction of Iron

Morgellons :
The Breaking of Bonds and the Reduction of Iron
Clifford E Carnicom
Nov 03 2012
Note: I am not offering any medical advice or diagnosis with the presentation of this information. I am acting solely as an independent researcher providing the results of extended observation and analysis of unusual biological conditions that are evident. Each individual must work with their own health professional to establish any appropriate course of action and any health related comments in this paper are solely for informational purposes and they are from my own perspective.

Three methods that appear to interfere with the molecular bonding of the iron-dipeptide complex that is now understood to be characteristic of the “Morgellons” growth structure have been established and identified. The iron-protein complex is believed to be of, or similar to, the “Rieske Protein” (iron-sulfur) form. These three methods also appear to be variably successful in reducing the oxidation state of the encapsulated iron from the Fe(III) state to the Fe(II) state. The discovered methods involve the use of ascorbic acid (Vitamin C), N-acetyl cysteine (NAC) and glutathione. The results of applying glutathione appear to be especially promising at this time, as it appears that a major disruption in the bond structure has taken place after approximately 72 hours. The methods have been established and verified through visual, chemical and spectroscopic methods and each has an effect independent of the others. The hypothesis to be made here is that the growth of the organism itself may be interfered with as a result of this work.

This result has been a primary target of research through this past year, and it may represent an important potential inhibitor to the structure growth. The results may also indicate a certain level of coincidence of research or result that has been achieved; an interest in the use of NAC as a mitigating influence (i.e., bio-film reduction) by direct experience has been expressed by independent parties over time[1]. Synergetic use of all three compounds is also a prospect for investigation. Additional research will seek out the particular chemistry of the disassociation and reduction process (see Additional Note below). Intensive and exhaustive study of the molecular structure of the proteinaceous compound with more sophisticated equipment remains in need.

It will be found that there are important interactions and relationships in the body between cysteine compounds, NAC and glutathione. The combination of influences and interactions between iron, cysteine, histidine, ascorbic acid, N-acetyl cysteine and glutathione represents an important pathway of research for the Morgellons condition. These considerations are to be added to those that have also been outlined in previous research papers on this site in recent years. Full consideration of all information that has been made available may be beneficial in developing any strategies of mitigation for the condition.

All tests have been conducted within a laboratory setting and they do not involve the human body in any fashion; please note the caution at the introduction of this paper. Formidable difficulties remain with the consideration of the highly impervious casing (likely keratin based) that encapsulates the internal growth forms and the environmental forms. The work herein, in combination with the importance of iron within the structure, as well as specific amino acids (cysteine and histidine) that have been identified as a part of the growth form, may represent important milestones in the prolonged research of the so-called “Morgellons” condition.

Listen to a Research Discussion on This Topic

Additional Discussion:

The iron in an oxidized Rieske protein form exists in the Fe(III) state. In the reduced Rieske protein form, one iron atom is in the Fe(III) state and the other iron atom is in the Fe(II) state. The iron-sulfur centers perform a function of electron transfer by alternating between the oxidized and reduced state; this is known as a redox couple. Ascorbic acid and NAC are both known to be powerful reducing agents. Glutathione is also a powerful reducing agent and it is a tripeptide that is known specifically to be able to break disulfide bonds. Disulfide bonds have long been though by this researcher to be a key element of the structural framework of growth. It can be shown directly by chemical tests that ascorbic acid, NAC and glutathione reduce iron from the Fe(III) state to the Fe(II) state. It is anticipated that this fact plays an important role in the protein (dipeptide) bond disruption that has been identified in this report.

The inability of glutathione to be effectively absorbed in the human digestive system is another important consideration; attention must be given to the “precursors” of formation of glutathione, such as N-Acetyl Cysteine (NAC), denatured whey and cysteine-rich foods. Please refer to the research discussion and the informational videos linked into this report for additional information on this important aspect of this research.

Listen to a Research Discussion on This Topic

Dr. Oz
Glutathione – Master Antioxidant
(3 min)

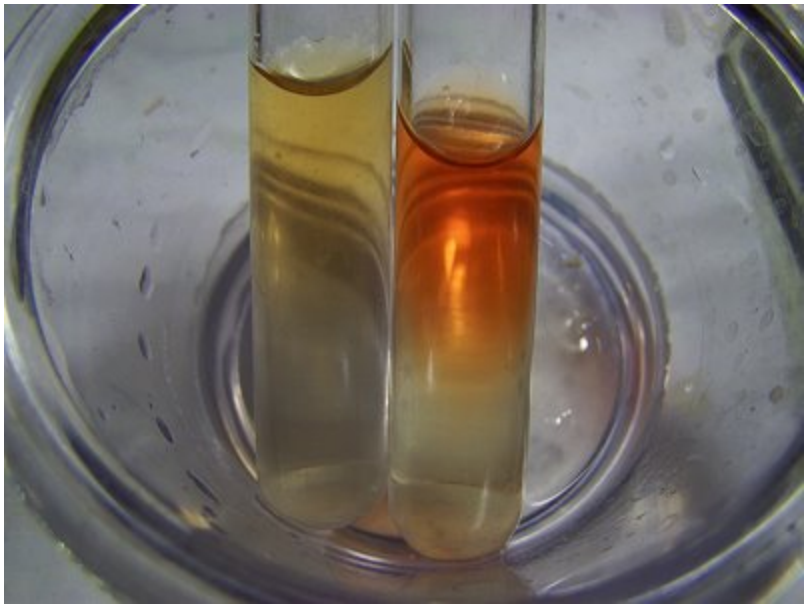
Dr. Mark Hyman
Glutathione – The Mother of all Antioxidants
(10 min)

David Perlmutter
Glutathione – The Master Antioxidant
Webinar Presentation (1 hr)

(Note the references to N-Acetyl Cysteine (NAC) and whey(lactoferrin) in the second video of the series(Dr. Mark Hyman))
(No endorsements of products to be implied or stated herein)

Dr. David Perlmutter
Glutathion Therapy – Part I (2 min)

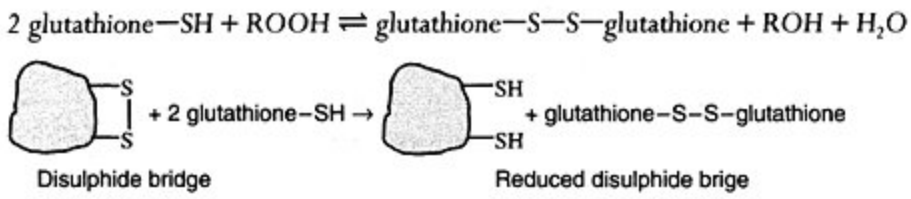
Dr. David Perlmutter
Glutathion Therapy – Part II (5 min)



A Demonstration of the Reduction of the Ferric (III) Iron Ion to the Ferric (II) Iron Ion Using Glutathione.

Both test tubes contain a solution of ferric (III) chloride. In addition, glutathione has been

added to the test tube on the right. Both test tubes are subsequently tested for the presence of the ferrous(ii) ion. The test tube on the right with glutathione passes this test; the test tube on the left fails the test. This demonstrates the ability of glutathione to reduce iron from the ferric (III) to the ferrous (II) state. The spectrophotometer graphs that follow within this report demonstrate this same phenomenon using developed cultures from oral filaments, i.e, a reduction in the iron oxidation state indicated by a shift of the wavelengths toward the red portion of the spectrum with the addition of glutathione and other anti-oxidants to the culture extracts.

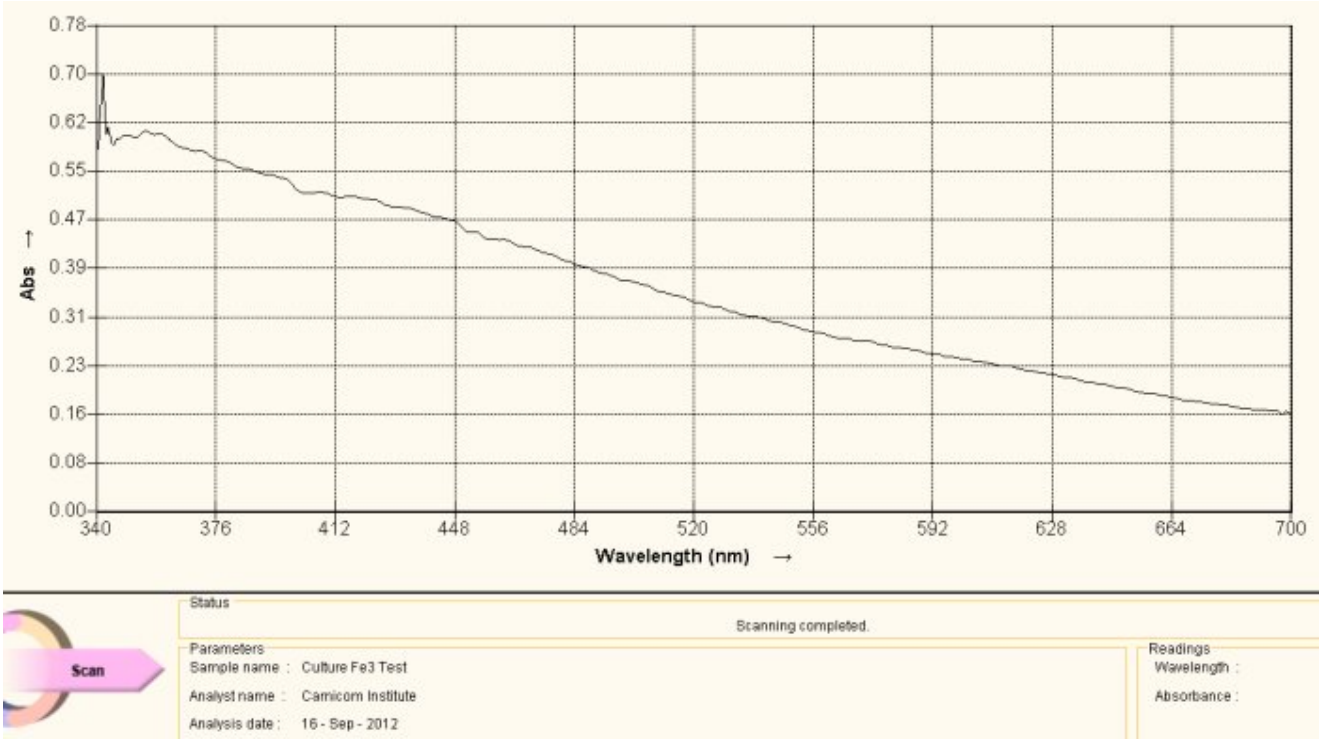


• **Figure 9.2** Reduction of unwanted disulphide bridges in proteins by glutathione.

Source : Chemistry for the Life Sciences, Rutton, 2003.

The diagram above shows how gluathione is effective in breaking down disulfide bonds that are an integral part of the growth structure of the cultured forms. Sulfur is indicated by 'S" in the sketch and the sulfhydryl group (sulfer attached to hydrogen) is indicated by "SH". The disulfide bond is indicated by the two S units linked together in the left segment of the diagram. The irregular structure is essentially arbitrary in form and could represent a proteinaceous structure, for example (as in this report).

The objective of the graphs below is to demonstrate, in much greater detail, a particular shift in color that takes place with the addition of certain antioxidants (vitamin C, NAC and glutathione). The shift in color occurs (towards the red end of the spectrum, peaking at approximately 490 nanometers (nm)) with the addition of a specific chemical reagent that turns red in the presence of ionic iron (Fe+2 and Fe+3). This test is useful from two standpoints: It detects both the breakdown of the iron-sulfur bonds within the core of the dipeptide and it demonstrates the reduction of the coordinated iron complex to ionic form(Fe+2).



Visible Light Spectrum of Oral Filament Culture Fe(III) Test (negative result)

The graph above serves as a reference spectrum for us. The sample for the spectrum is an extract from the numerous identical cultures that have been developed from oral filament samples.

The extract is formed in the following fashion: The culture is fully developed into the filamentous form. The culture is then removed from the growth medium (in this case red wine), thoroughly rinsed and then dried by subjecting it to low heat for a prolong period. The dried culture is then pulverized to a powder state with mortar and pestle. After drying and pulverization, the sample subjected to a sodium hydroxide (lye) solution along with heating to the boiling point. This process will break down the growth form sufficiently to at least partially dissolve the powdered form to produce a colored solution, which is required for visible light spectral analysis. The heat and lye process is a known method that will break down, at least in part in this case, proteinaceous materials. The color of solution that results is dark brown. This alkaline solution is then filtered into a storage container and exists as a concentrated extract of the original culture.

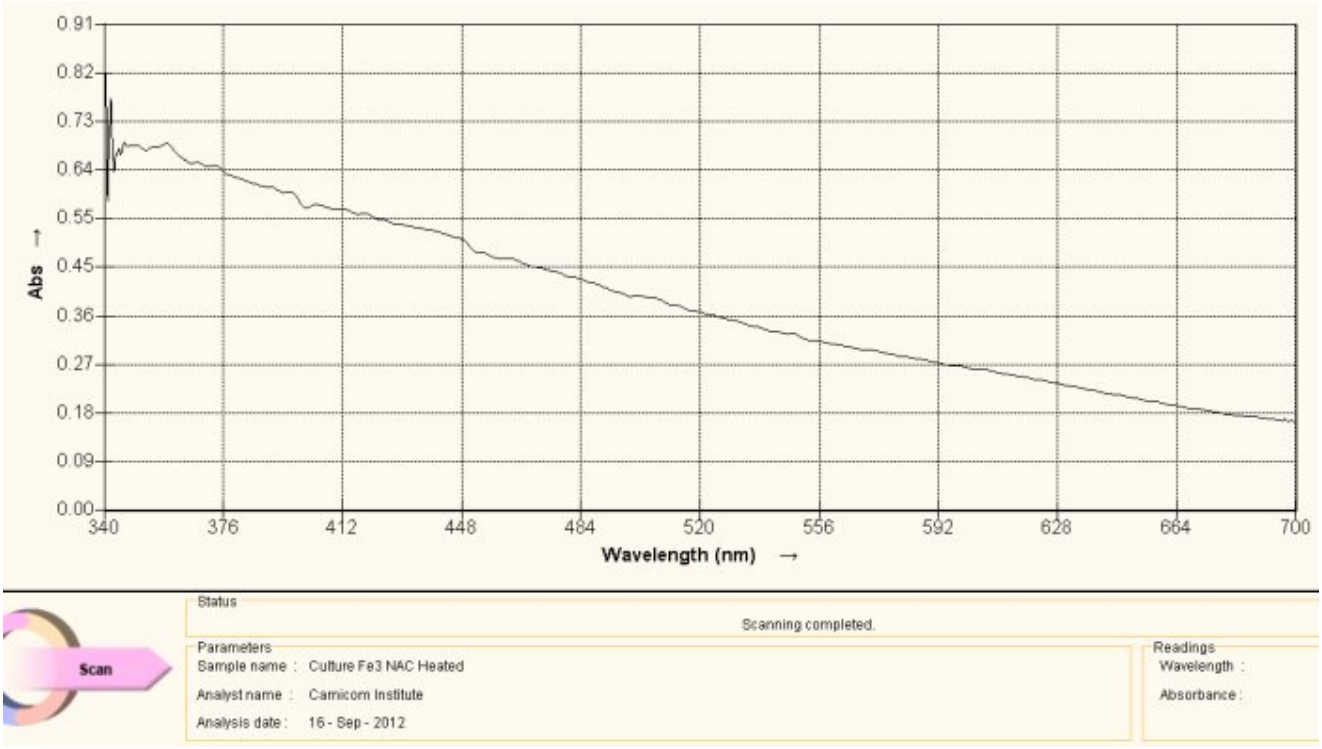
All information at this time indicates that it can be stored essentially indefinitely in this state without biological degradation; subsequent cultures can be developed further at any time in ease. This result strongly suggests that a “spore-like” state of existence is in place under these circumstances. This fact has actually been demonstrated earlier on many occasions, such as the development of cultures from environmental filaments (e.g, the “EPA” filament) ten years after the original collection. As has been repeatedly expressed, there appears to be no significant chemical , biological or morphological difference between the environmental

filament samples the oral filament samples, the skin lesion filament samples and the culture filament samples. This statement alone is profound with respect to expected distribution of the “Morgellons” condition.

The extract that has been created is too concentrated to use directly in spectral analysis; it must be diluted to allow sufficient light to pass through the solution. In the case above, approximately four drops of the extract are placed into approximately three milliliters (ml) of distilled water; the original solution and culture spectrum under the lye-heated treated condition is a pale brown. It is of passing interest that this color alone corresponds well with that of the hydrated ferric ion complex. The subject of iron within the growth form has been discussed at great length in prior reports (e.g., see Morgellons : A Thesis).

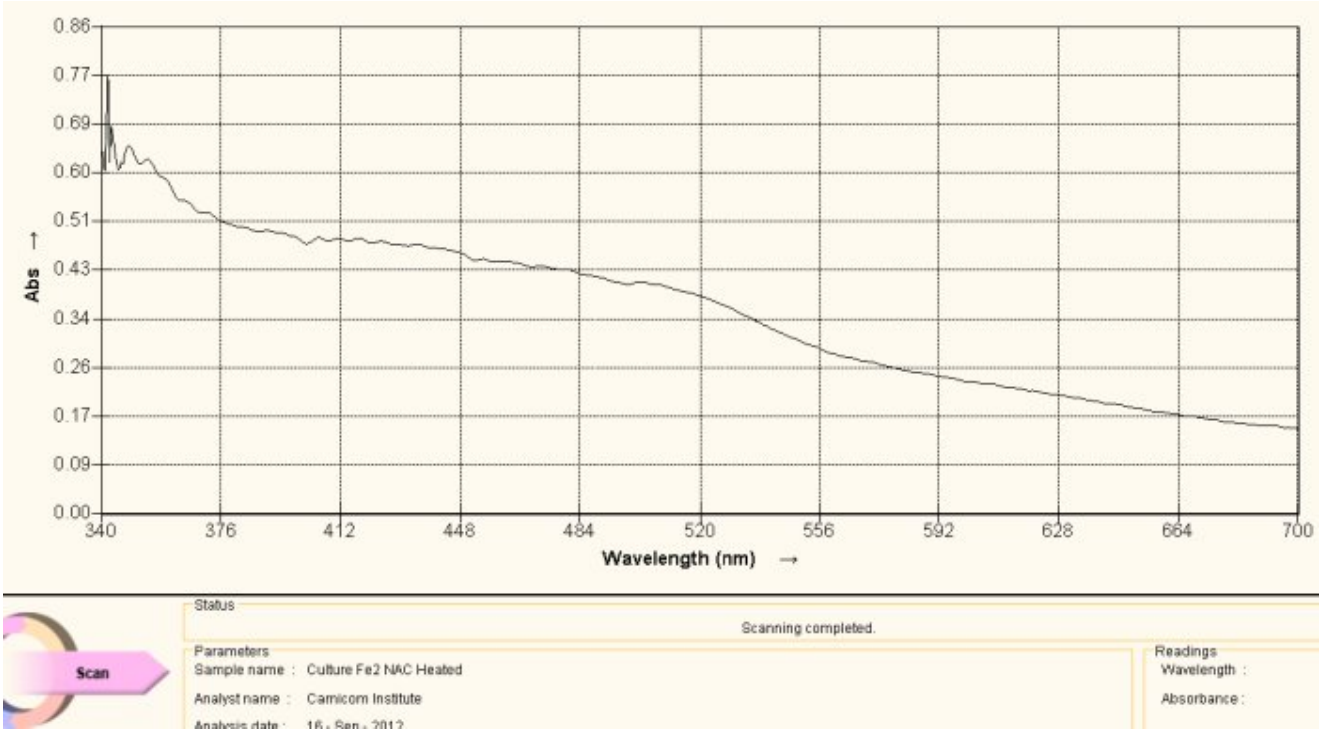
For the purpose of this study, the sample is then subjected to a chemical reagent (potassium thiocyanate) that is extremely sensitive to the presence of the ferric iron state, i.e., ionic iron iron in the +3 oxidation state (III). This reagent will cause a solution to turn red in the presence of the ferric ion. Spectral analysis is useful here as it can graphically demonstrate shifts in frequency that may not be apparent to the human eye. In the case above, there is no discernible difference in color by eye or by spectral analysis with the addition of the Fe(III) detection reagent. This proves to us that iron in the ***ionic state*** of +3 does not exist in the original culture extract. It says ***nothing*** about the presence of iron forms that may exist in other states (e.g. such as a coordinated iron complex) as we shall soon see. These complexities of the iron presence issue have also been discussed at length in the previously mentioned report.

The spectrum is then taken after the Fe(III) reagent detection addition and the result is shown above as a reference spectrum. What we observe in the visible light portion of the spectrum is a fairly monotonic and steady decrease in absorbance as the wavelength decreases. It would be of great value to extend this spectral analysis into the infrared and ultraviolet regions, but this equipment is considerably more expensive to obtain and it is not yet available to the Institute. The resources to expand the current analysis remain in great need. This spectrum, nevertheless, is of great value as a reference point, and it suffices to be able to detect the shifts in frequency that result from the anti-oxidant studies that are the basis of this report.



Visible Light Spectrum of Oral Filament Culture Fe(II) Test (negative result)

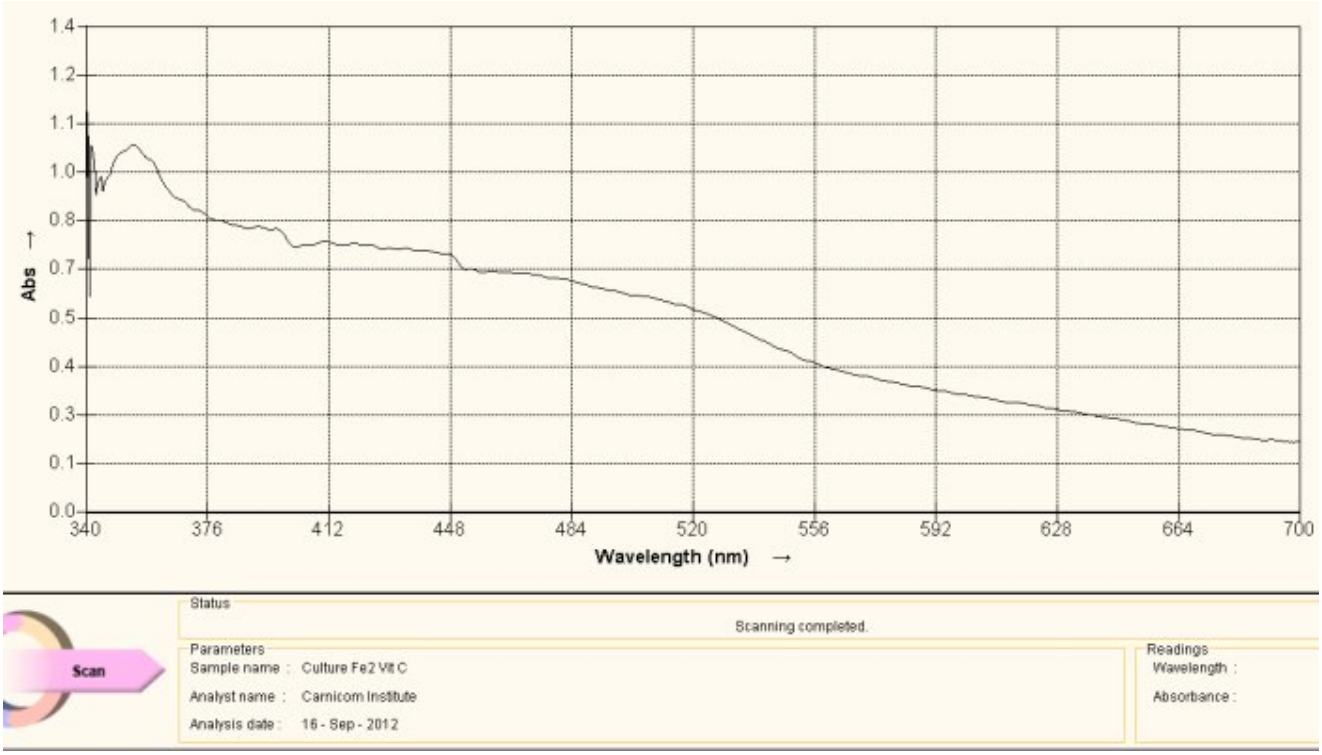
The description for the graph above is identical to that of the previous one with one important exception. In this case the reagent that has been applied (1,10 phenanthroline) is a test for the presence of the ferrous (Fe+2) iron state(II) within the culture extract vs. the ferric (III) form. This test result is also negative and it likewise shows that iron (III) does not exist in ***ionic*** form within the culture extract. Equally, it says ***nothing*** about the existence of iron in another form (e.g. ionic or complexed state) within the culture extract. The importance of the state of iron that exists within any compound or complex is therefore paramount and it will be demonstrated further later in this report.



Visible Light Spectrum of Oral Filament Culture Fe(II) Test NAC (positive result)
Note shift toward the red portion of the spectrum.

This spectrum shows an important difference with the two reference graphs that have been previously presented. This particular sample has N-acetyl cysteine (NAC) applied to the culture extract in addition to the reagent for the detection of iron (III). What is important to observe here is s the shift in frequency toward the red portion of the spectrum. What this means, in simpler terms, is that ***iron in the ferrous ionic state (III) has now been detected***.

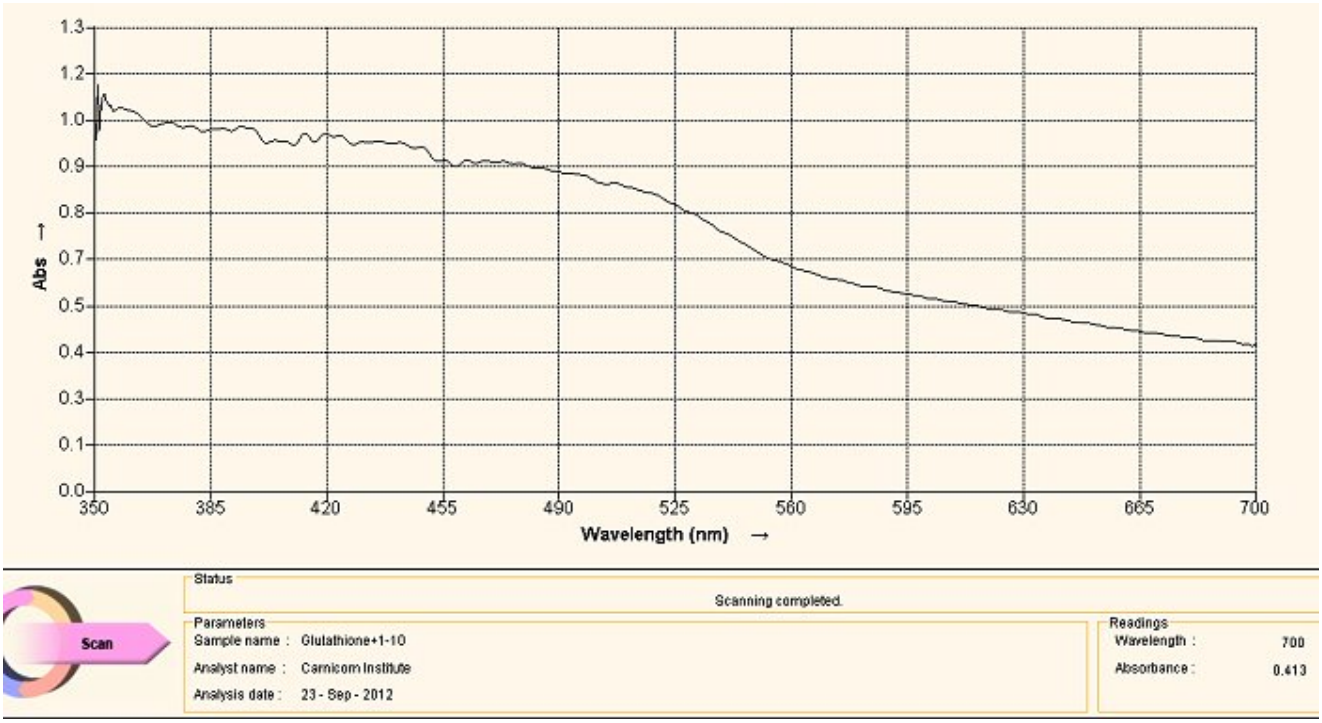
This change means that two very important changes have taken place. First, the bonds that hold the iron within the growth structure have been broken to release the iron in the first place. Secondly the iron is the the reduced state of Fe(+2), or in the state that is again able to combine with oxygen in hemoglobin. These two findings potentially represent distinct advantages in the quest to “interfere” with the growth stages of this (i.e., “Morgellons” associated) organism. Thirdly, this particular anti-oxidant (reductant) can be incorporated into general health improvement regimens as it is already widely known and used to that end in the health and medical communities.



Visible Light Spectrum of Oral Filament Culture Fe(II) Test Ascorbic Acid (positive result)
Note shift toward the red portion of the spectrum.

The discussion as it relates to NAC above can be applied equally in this case, but again with one important exception. In this case, the added agent to the culture extract is ascorbic acid, or Vitamin C. All conclusions above made with respect to the use of NAC above remain similar and valid with the use of ascorbic acid. The reduction level in both cases appears to be relatively weak, i.e. the shift in color is also detectible by eye, but barely so. The ability to break the iron-disulfide bond complex (as concluded by the detection of iron oxide and cysteine within the complex) and to reduce the iron to a free +2 state is of potentially monumental significance.

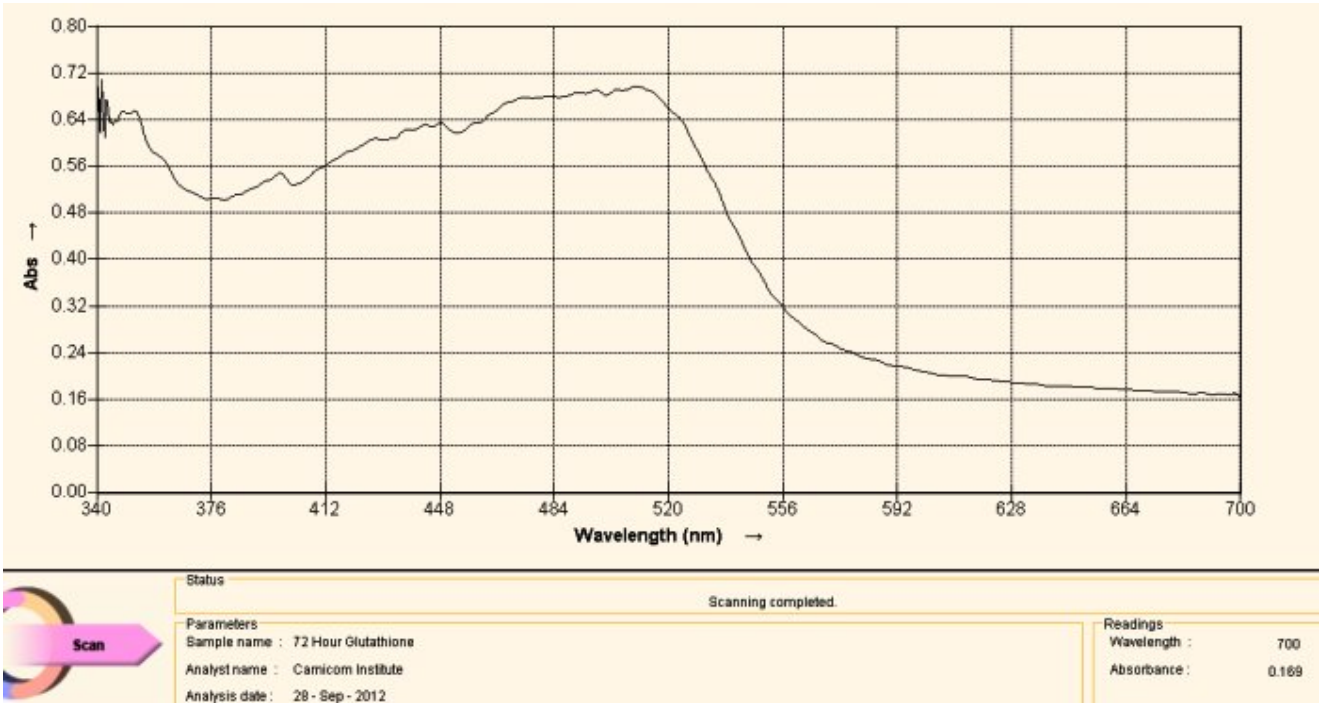
It is also wise to recall earlier research that indicated a level of effectiveness in inhibiting the growth of the culture using ascorbic acid as well. That earlier research may be deserving of additional attention and repetition in light of these current findings. It may well be found that there will be associated relationships, particularly in the anti-oxidant (i.e., reductive) qualities of ascorbic acid. Recollection of the mechanisms involved in the “Fenton” reaction may also serve us well in the near future and they too have been described within earlier research.



Visible Light Spectrum of Oral Filament Culture Fe(II) Test Glutathione (positive result)
Note shift toward the red portion of the spectrum.

The case of using glutathione as an anti-oxidant (or as a reducing agent) is an especially interesting one. The call to consider the use of glutathione was based upon research related to the need to break down disulfide bonds, and as such it arose from a strongly directed proposition. The results have been favorably surprising and they have led to an in-depth interest in glutathione and to how it affects our health in the main.

With respect to the spectrum immediately above, we can actually regard it as being essentially equivalent to the two previous cases, i.e., NAC and ascorbic acid. There is indeed a shift in the wavelength towards the red end of the spectrum (indicating the presence of Fe(II), but it continues to affect the culture in a relatively weak sense. Our pleasant surprise comes with the final spectrum shown below.



Visible Light Spectrum of Oral Filament Culture Fe(II) Test Glutathione after 72 hours. (positive result)
Note major shift toward the red portion of the spectrum.

This last case, again involving the use of gluthathione as a reducing agent, has come about by *"accident".* Many acts of discovery seem to follow that fortuitous path. What has happened here is that the test tube was allowed to sit for approximately three days. At the end of this period the extract solution had turned a bright and visible red. The spectrum above is another way of verifying this same fact; peak absorbance has been clearly, strongly and definitively shifted toward the reddish portion of the spectrum, peaking at approximately 500 nm. The reddish color appears, again, because of the induced presence of the ferrous iron ion by the glutathione, in addition to the breaking of the bonds that encapsulate (or chelate) this same iron.

What this means, also in simpler terms, is that glutathione (with the sufficient passage of time) is quite effective in breaking down the bonds in the proteinaceous complex that has been identified within the "Morgellons" growth form. In addition, it appears equally and concomitantly effective in releasing and reducing the free iron to a +2 oxidation state. Iron is required to be in the +2 oxidation state to bind to oxygen within hemoglobin.

The aggregate impact of these anti-oxidants (reducing agents) does hold some promise for us. Interference with the bond structure of the dipeptide that has been identified, along with the release of the chelated iron within the complex, have been the primary goals of this researcher for some time now. The continued pursuit of this strategy appears to remain as a

wise choice of energy, effort and research. The pace and depth of this research can be increased with proper support, should it ever come to pass. There remain other viable strategies as well to be explored.

Readers , as always, are advised to consult with their health practitioners as to how this information may be best put to use. For instance, the complexities of glutathione actions within the body do not allow for simple “replacement by supplement”. There is a host of knowledge about the “precursors” of glutathione that is required to more effectively use the information and discoveries within this report. Nevertheless, the role of anti-oxidants (reducing agents) with particular emphasis upon glutathione, N-acety cysteine and ascorbic acid appears to be justified with promise at this stage. Readers may wish to avail themselves of additional mitigating strategies that have been enumerated within the numerous research papers on the Morgellons issue within this site.

Sincerely,

Clifford E Carnicom
October 27, 2012[2,3,4]

Additional notes:

1 Appreciation is extended to Sandra Autry, former Carnicom Institute Associate Member, for her interests, recommendations and experiences expressed on this topic – Personal conversation.

2. Many thanks to Carol Carnicom for her recent expressive cello playing in Devorak’s New World Symphony, which served as a dramatic and energetic backdrop to one of the sessions for this report.

3. This paper authored by Clifford E Carnicom, originally entering this world as Clifford Bruce Stewart, born January 19, 1953. Call it a journey of adoption.

4.Many thanks to the Pecos River at Villa Nueva in New Mexico, where the vestiges of Indian summer have graciously closed down this report..