

Academy of Sciences Belarus  
Institute of Bioorganic Chemistry  
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# *The Sensitive Bioelectrical System in Humans*

*Vincenzo I. Valenzi*

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CIFA Centre Internationale for the etude of f actor of Ambiance [www.cifa-icef.or](http://www.cifa-icef.or)

# ABOUT THE MECHANISM OF ACTION OF DRUG

- **The magic bullet.**

A fundamental progress for understanding the relationship between a drug and the cell components has been achieved when the concept of “drug receptor” has been formulated. Paul Ehrlich (1845-1915) deserves the merit of having the insight that the effect of drugs could be understood against as the consequence of their chemical interaction with the tissue. To better explain this concept he proposed the suggestive definition of a <<magic bullet>> able to hit its specific target (the “receptor”) in the crowd of chemical components of the living organism.

# Actual problems and controversial on drug intolerance

- However the “magic bullet” is not always able to get the target. Frequently, in spite of the ceaseless progresses of pharmacology, adverse and intolerance against the drugs may occur and produce situations where a careful evaluation of the risk/benefit ratio of the use of the drug is mandatory. A fraction as the 70/75% of the disease induced by drugs cannot admit any explanation in terms of the usual immunological reactions, although those symptoms were induced by drugs which were well known allergens. In these cases the disease has been christened as “pseudo-allergy” or drug intolerance

# A QUANTUM-CHEMISTRY INTERACTION FOR DRUG INTOLERANCE?

- In a nutshell, the appearance of electric voltage on the skin suggested that an electromagnetic (e.m.) mechanism could underlie these strange pseudo-allergies; since these symptoms were the effects of drug, the intriguing possibility arose that the molecules of drugs could extrinsecate an e.m. action apart from the universally accepted chemical action.

# The role of water as ferroelectric system in biology

- An increasing number of data shows that water in liquid state is endowed with very peculiar properties and undergoes structures which may retain in a stable manner some conformation's information.
- Physicists (and also Preparata, Del Giudice, Trukhan, Zhadin) elaborated several theories about these structures, which deserve experimental checking.
- Anyway in the last century, researchers like Giorgio Piccardi, John Eccles, Jacques Benveniste have come to similar conclusions based on bio-quantum-chemistry experiments.

HYPOTHETICAL MECHANISM OF BIOLOGICAL EFFECTS AT  
VERY LOW CONCENTRATION . OSCILLATING FIELDS AND  
INTERMOLECULAR COMMUNICATION 1991 J.BENVENISTE

- If the active molecules are absent (or best present in such low number that they cannot induce a chemical response), we have to admit that the specific effect which we detect is of non-molecular origin.
- **The physical basis of this phenomenon is at present unknown.**

# Molecular signalling

Jacques Benveniste 1991

- The question as to the nature of the intimate mechanism (s) of molecular signalling, which are fundamental to all of biology, is not only without response, but has not even posed.
- We propose that the essential molecular function: recognition (at distance?), interaction activation, secondary and tertiary structure, and conformational change (triggering, directing, stopping of movement in the new conformation....) are in fact, determinate by electromagnetic mechanism.

# Vacuum and Coherence in Nature

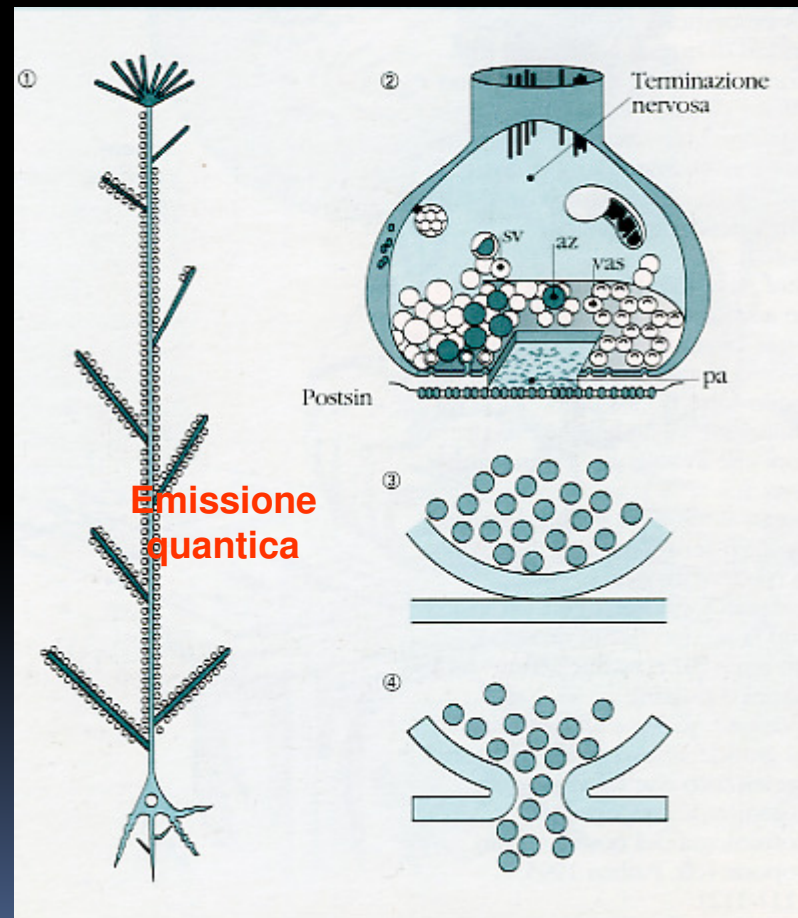
Webnar, 25 July 2007





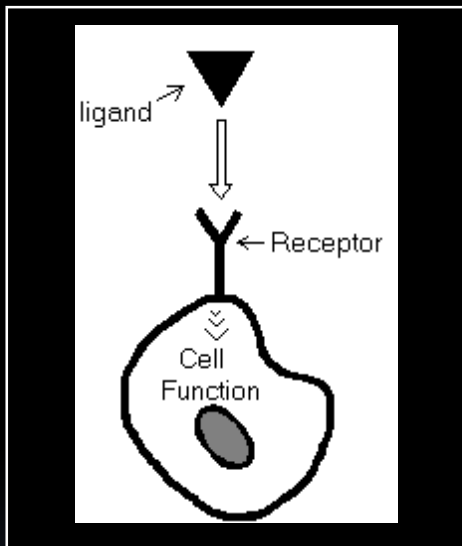
“The psycone coordinates exocitoses by means of quantum probability fields”

*Sir John Eccles*



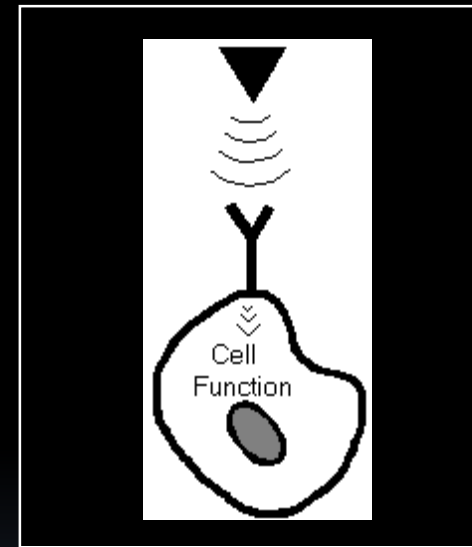
# Molecular signaling

## The Current Theory: "structural matching"



The 3D structure of ligand matches that of the receptor. Physical proximity induces receptor conformational changes which in turn triggers the cascade of events prompting cell function.

## The Benveniste Theory: "electromagnetic signals"



Proximity favors resonance of ligand-receptor specific EM signals. Resonance serves as an iperconductive mechanism for activation changes which occur at all steps of the cascade inducing cell function.

# Resonance Peak in the Current through the Solution (Zhadin Effect)

ZHADIN M.N., NOVIKOV V.V., BARNESF.S. PERGOLA N.F. (1998) *Combined action of static and alternating magnetic fields on ionic current in aqueous glutamic acid solutions.*

Bioelectromagnetics 19: 41-45.

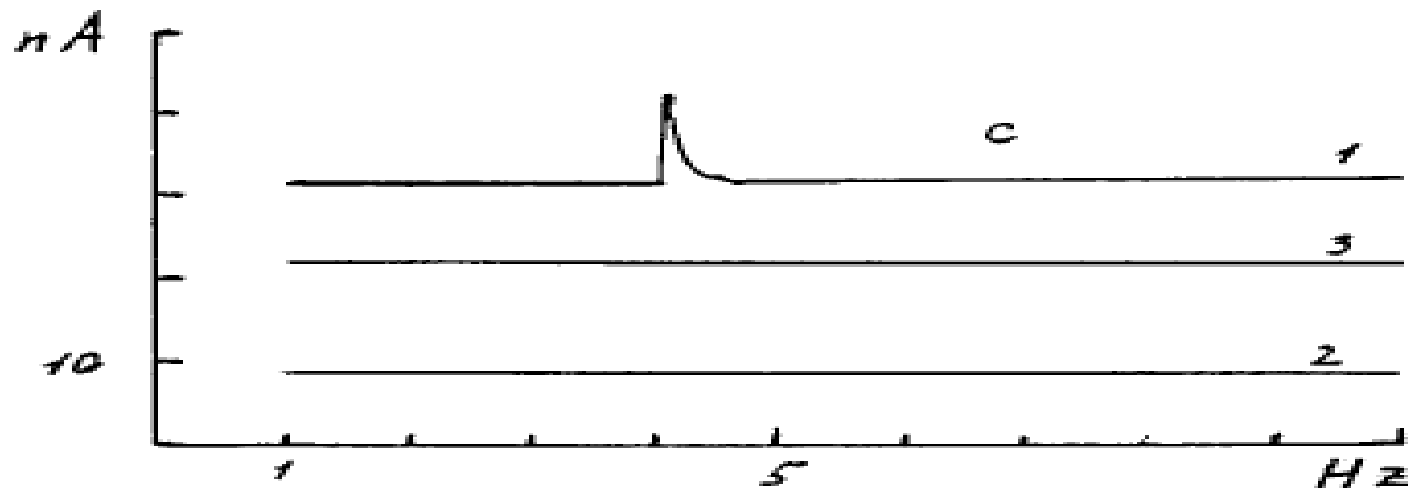


Fig. 2. Ionic current through aqueous glutamic acid (Glu) solution as a function of alternating magnetic field frequency at different values of static magnetic field. The alternating magnetic field frequency in Hz is plotted on the horizontal axis; the ionic current in nA is plotted on the vertical axis. The alternating field amplitude is  $0.025 \mu\text{T}$ ; a: static magnetic field  $B_0 = 20 \mu\text{T}$ ; b:  $B_0 = 30 \mu\text{T}$ ; c:  $B_0 = 40 \mu\text{T}$ ; 1: Glu solution with  $\text{pH} = 2.85$ ; 2: Glu solution with  $\text{pH} = 3.2$ ; 3: water with  $\text{pH} 2.85$ .

International Journal of

# QUANTUM CHEMISTRY

## Abstract

Benveniste had observed that highly dilute (and even in the absence of physical molecules) biological agents still triggered relevant biological systems. Some of these experiments were reproduced in three other laboratories who cosigned the article, (Davenas et al., *Nature* 1988, 333, 816). Further works, [(*Medical Hypotheses* 2000, 54, 33), (*Rivista di Biologia/Biology Forum* 97, 2004, 169)], showed that molecular activity in more than 50 biochemical systems and even in bacteria could be induced by electromagnetic signals transferred through water solutes. The sources of the electromagnetic signals were recordings of specific biological activities. These results suggest that electromagnetic transmission of biochemical information can be stored in the electric dipole moments of water in close analogy to the manner in which magnetic moments store information on a computer disk. The electromagnetic transmission would enable in vivo transmissions of the specific molecular information between two functional biomolecules. In the present work, the physical nature of such biological information storage and retrieval in ordered quantum electromagnetic domains of water will be discussed. © 2009 Wiley Periodicals, Inc. Int J Quantum Chem, 2010

<http://academic.research.microsoft.com/Publication/22164250/the-biophysical-basis-of-benveniste-experiments-entropy-structure-and-information-in-water>

A. Widom Y.N. Srivastava, V.I. Valenzi

# The Biophysical Basis of Water Memory: Entropy, Structure and Information in Water”

International Journal of Quantum Chemistry (Wiley and Sons), Published on line.May 19, 2009[DOI: 22140]

- **Conclusion:** We have only briefly indicated how electric and magnetic dipole moments carry entropy and thereby information in aqueous electrolytes. Storing information allows biological properties to depend on past histories of electric and magnetic dipole moments within the water solvent. Since electromagnetic waves from sources far removed from the information storage can nevertheless have effects on such memory, ***it is clear that biological wireless connection may exist.*** Such notions as information memory capacity and biological programs are quite common in describing polymer genome analysis. It should not be surprising that such concepts should be present in other types of biochemical systems. For example, the communication between human memory residing in the human brain and the environment which evokes such memory relies on information carried by nerve cells whose electrical signals critically depend on ionic conduction. Although we are far from working out the relevant ionic electrical connections in life forms more complicated than (say) a lobster, ***it is very clear that electrolytic ionic information (i.e. entropy) plays an important role in the resulting electric circuitry.***

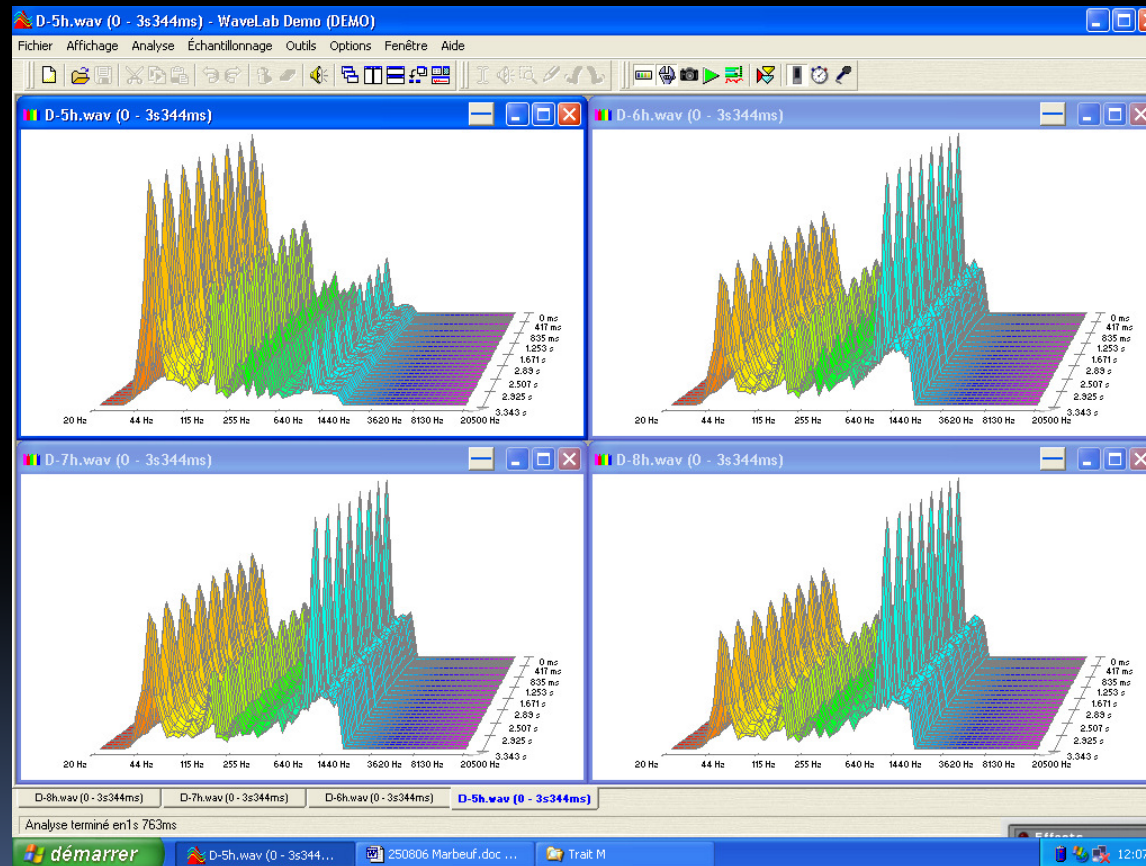
## Electromagnetic Signals Are Produced by Aqueous Nanostructures derived from Bacterial DNA Sequences

Luc MONTAGNIER<sup>1</sup>, Jamal AËISSA<sup>1</sup> StJephane FERRIS<sup>1</sup>

Jean-Luc MONTAGNIER<sup>1</sup>, Claude LAVALLÉE<sup>1</sup>

- Abstract: A novel property of DNA is described: the capacity of some bacterial DNA sequences to induce electromagnetic waves at high aqueous dilutions. It appears to be a resonance phenomenon triggered by the ambient electromagnetic background of very low frequency waves. The genomic DNA of most pathogenic bacteria contains sequences which are able to generate such signals. This opens the way to the development of highly sensitive detection system for chronic bacterial infections in human and animal diseases.
- Key words: DNA, electromagnetic signals, bacteria.

# Plasma from patient with Alzheimer Disease EMS (+) between $10^{-6}$ and $10^{-11}$



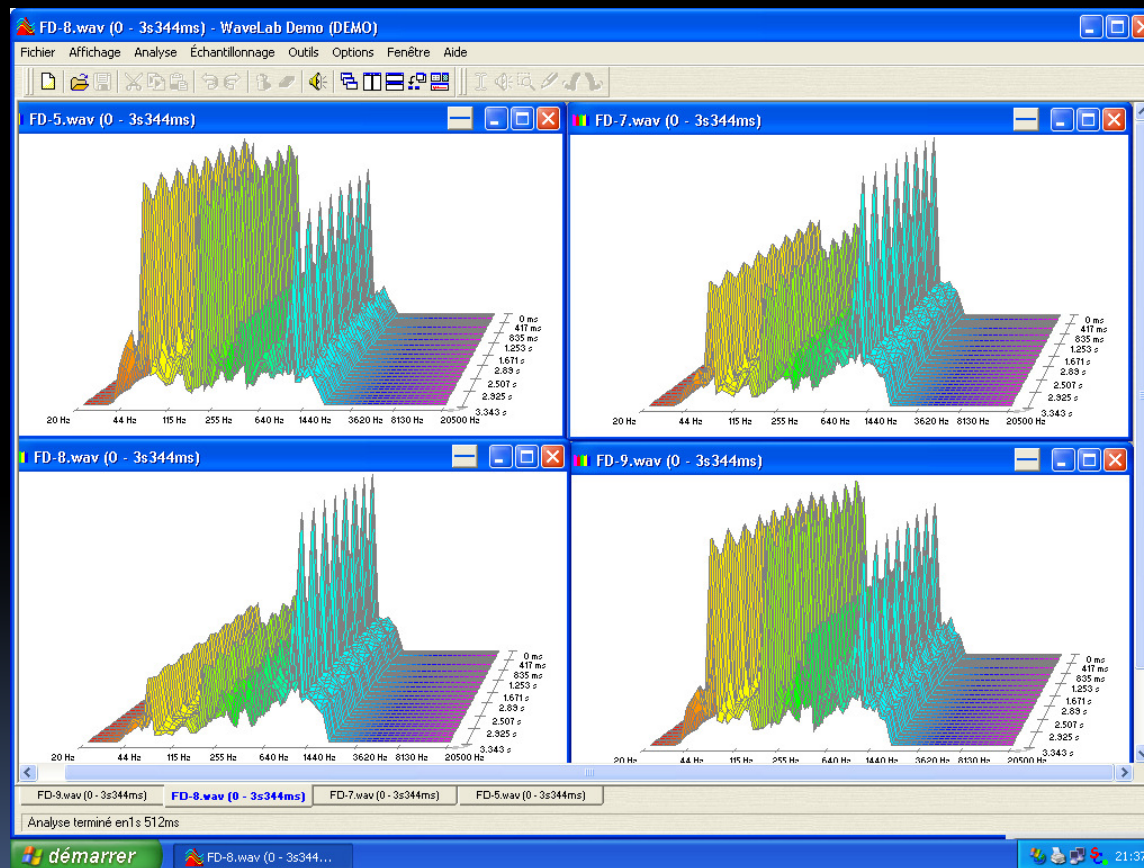


# The case of HIV/AIDS

(in collaboration with CIRBA, Ivory Coast)

African patients, generally infected with the A/G HIV1 subtype

(in vitro : CEM cells infected with HIV1 Lai)





# The role of Molecular Signalling from bacteria nano fragment of DNA

- While the signal from blood could be an clear instrumental data (virus of herpes is for example, a well know part of Human DNA in people with herpes infection), less clear appear the etiopathogenetic mechanism whit which very low em field inside cell are able to produce disorder and illness.

# New scientific vision of chronic diseases

- Today something go to be more clear also thanks to work of Luc Montagnier et coll. from an experimental side and Allan Widom et coll. from theoretical side. Montagnier, continuing Benveniste research on bacteria signal from blood, show how nano-fragment of DNA of bacteria and virus emitting specific electromagnetic signal that could be used for diagnostic also of some chronic disease as Alzheimer, Rheumatoid Arthritis, AIDS, etc.

# New scientific basis for diagnostics and therapy

- This discovery seems explain some strange observation from bio resonance, its diagnostic activity, also in absence of traditional detection of virus or bacteria, and more the therapeutic effect of so-call inversion of frequency that seems able to care some viral and bacterial disease and also some chronically disease as SLA, RA, etc reported in some medical experiences of bioresonance therapy in the last 40 years

# The role of Molecular Signalling from bacteria nano fragment of DNA

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# *The Sensitive Bioelectrical System in Humans*

- A possible model could be represented by SEP (Skin Electric Parameters) that measure the Ohm resistance in the chinese meridian see as circuits to variable resistance . On these circuits, em signal extern and intern to body, or quantum field, could be able to induce relevant modification of electric resistance as observed in some research on Meteoropathies in Spa Medicine, in pharmacoelectrodynamics ecc. It seems indeed that the Ohm Law and em signal and quantum field could have a key role in general physiopathology

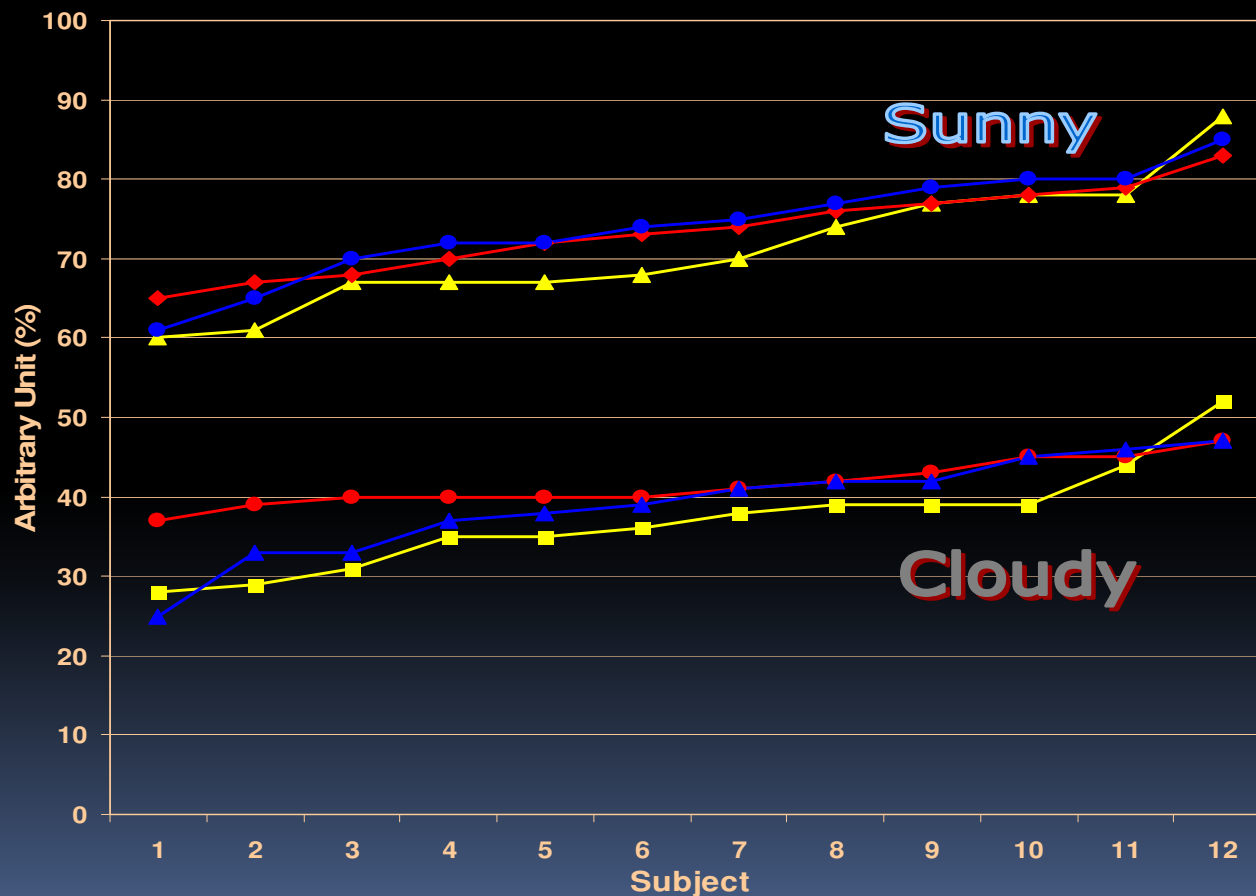
# The substrate for em and quantum signal seems to be the meridians .

## The Ohm Law in Therapy and Biology

- Measures on meridians highlighted in subjects with meteoropathies and various pathologies, that the electrical resistance increased in physical electric circuits with a medium of about 43 scale unites of SEP corresponding to 130,000  $\Omega$
- “Normal” level of resistance is 95.000 Ohm =50 us
- After the administration of a coherent therapy, we saw a resistance fall in medium at 39,000  $\Omega$  (70 us), with an improvement of bioelectric performance due to an increase of physical electric currents, in accordance with Ohm’s law,  $I = V/R$
- Power in the biological system vary with  $W = V \times I$ , with functional correlations (performance status, immunological status, muscle power, pain, inflammation, allergy, dyspnea, etc.)

# Health Subjects

Homogeneity of 3 groups of health subject



Ohm

V alone US

10 000

91

27 000

78

39000

70.5

47000

66.5

95000

50

100 000

48

130000

43

200000

32

220 000

29

300000

24

560 000

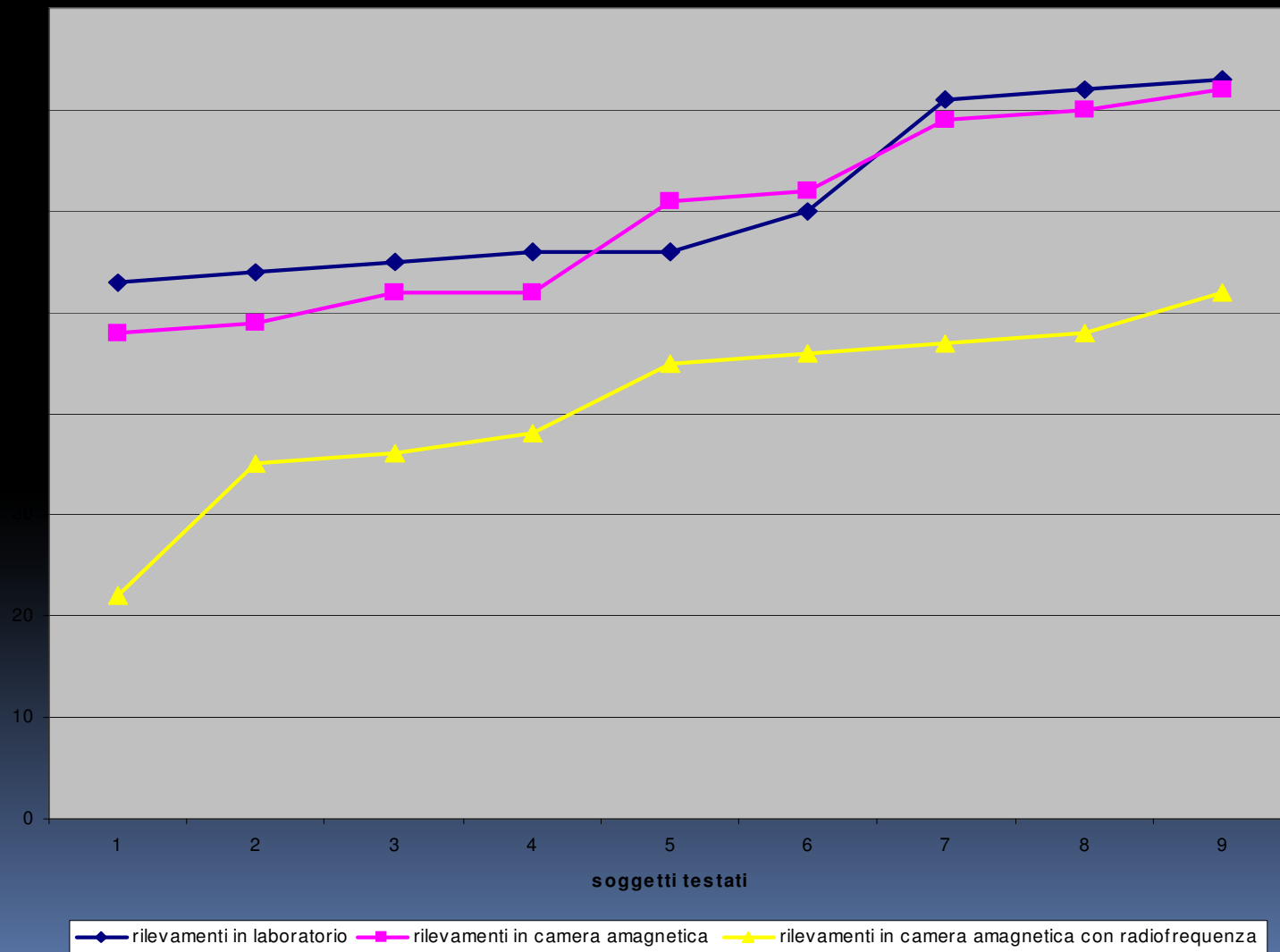
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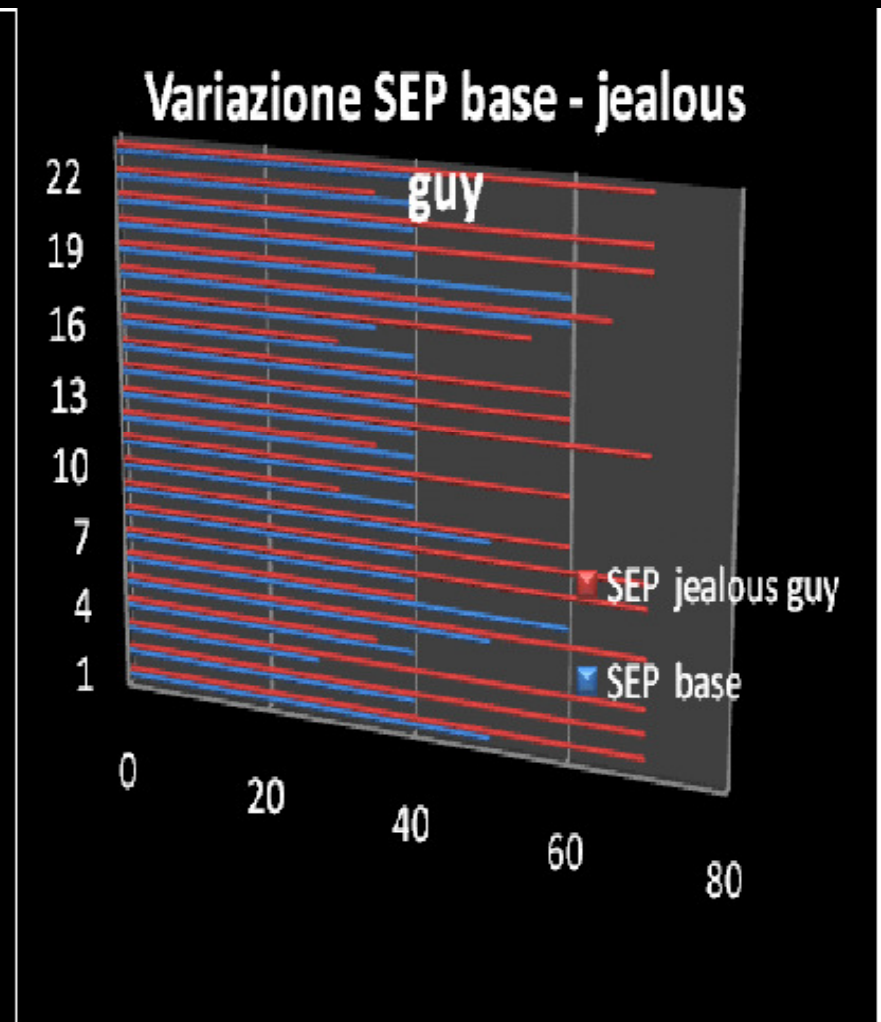
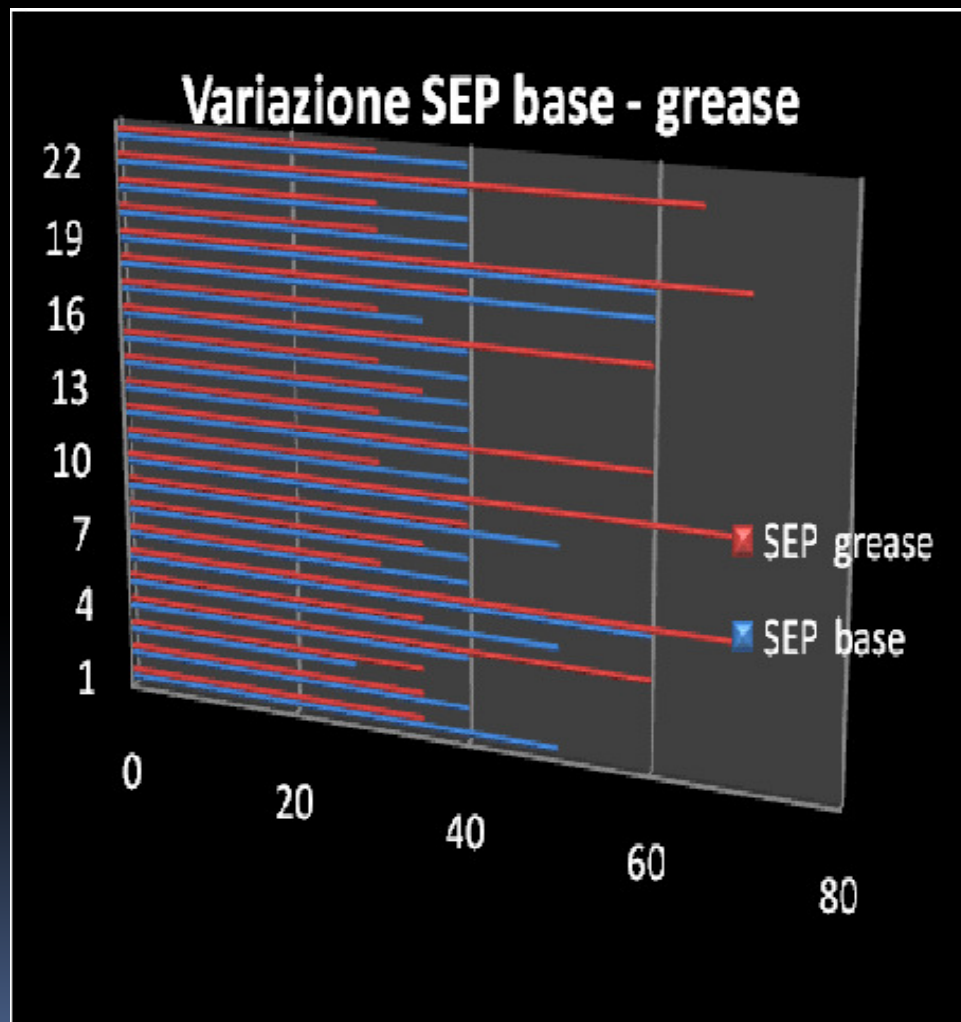
# Effects on the conductivity by magnetic field of cell phone antenna 10 V/mt - 900 GHz on seven men exposed in amagnetic room

V.I.Valenzi, S. Grimaldi, G. Quartieri, G. E. Gigante; G. Mileto, G. Monaco: *Osservazioni sulle variazioni bioelettriche nell'uomo indotte da campi elettromagnetici in camera amagnetica*. Ricerca Aerosp. Pag. 33-38, Anno XXI- N. 1. 2005

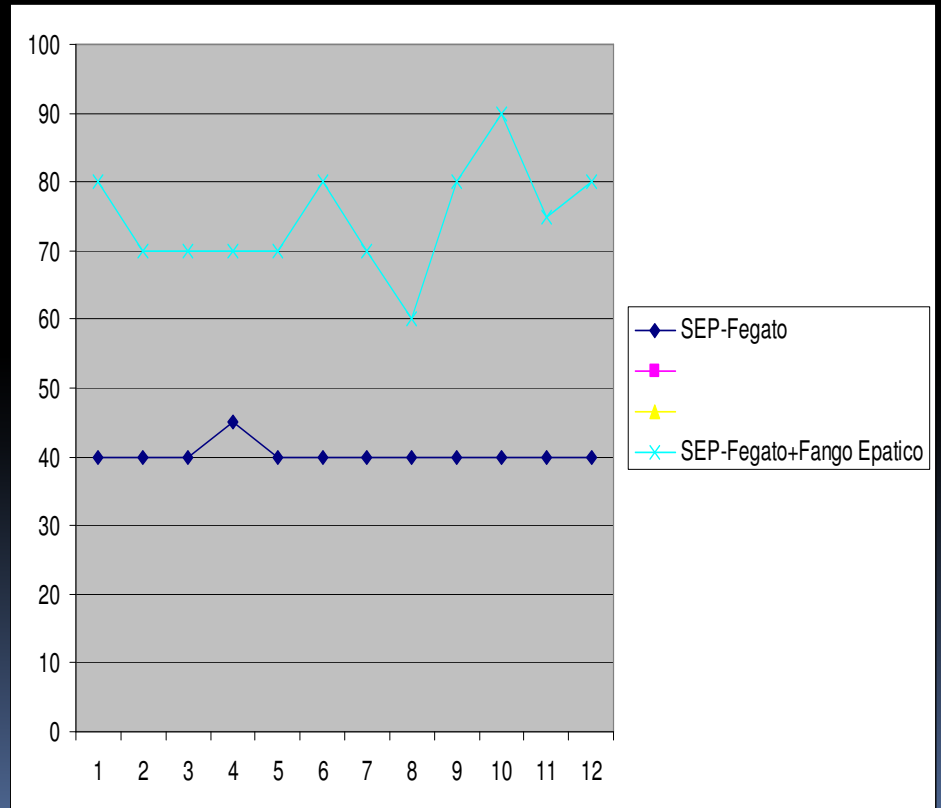
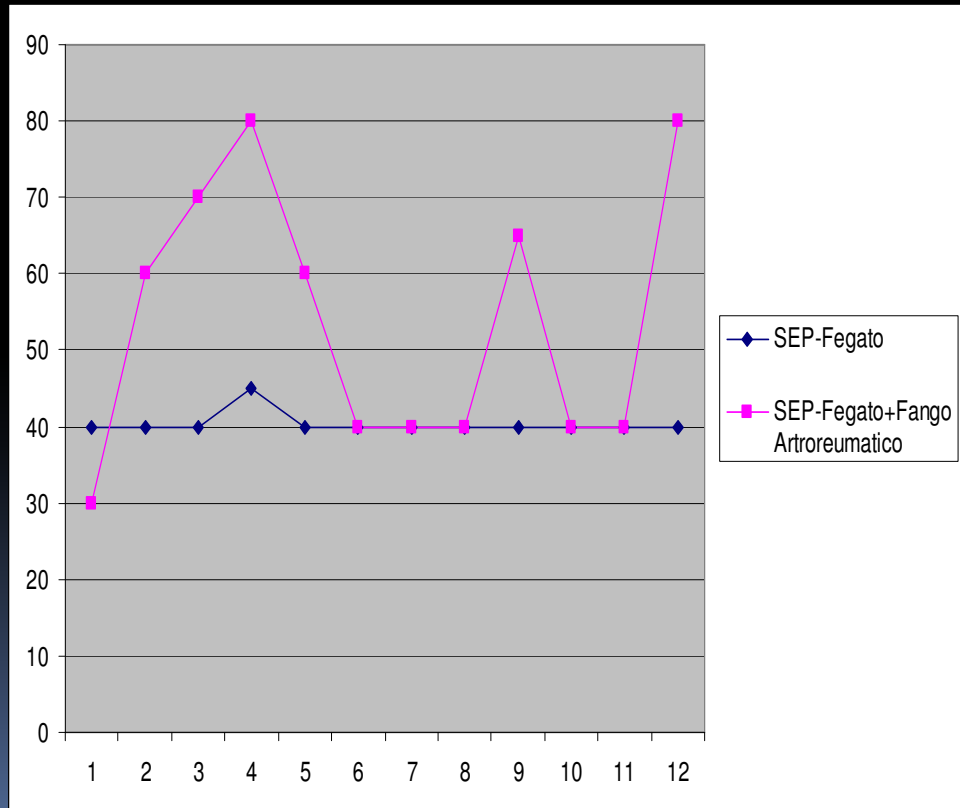




# BEATLES AND J. TRAVOLTA SEP EFFECTS



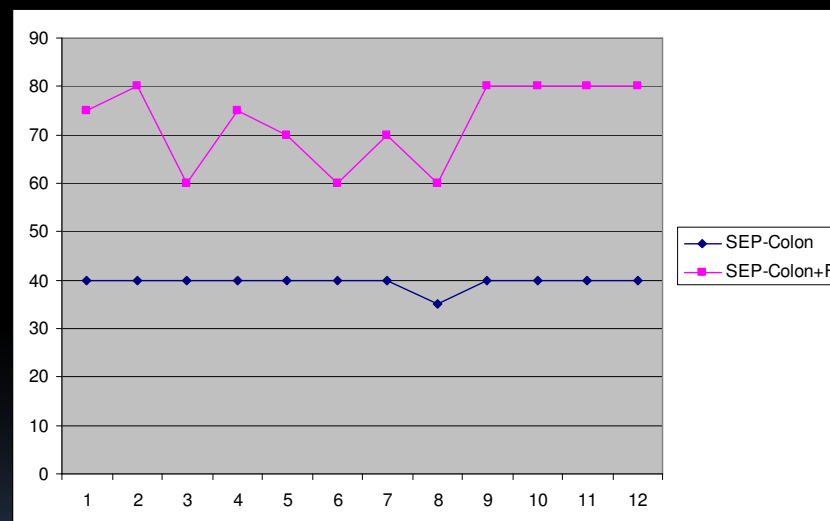
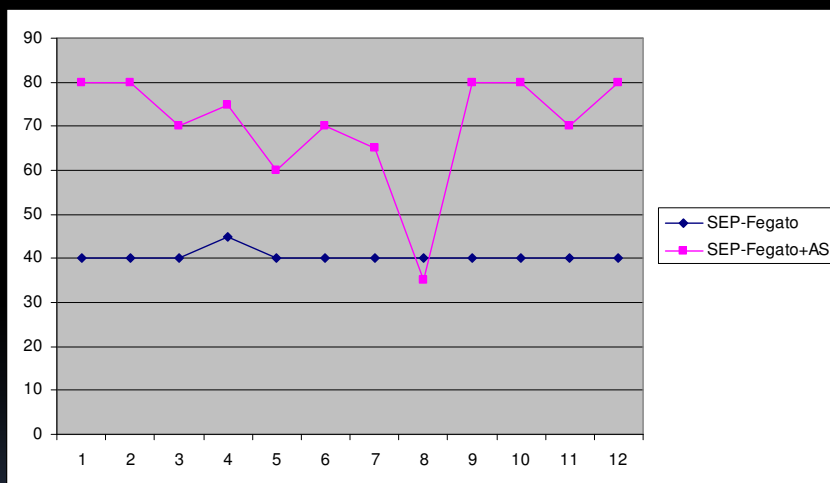
# Mud therapy and rheumatic meteoropathic pain: muds are not all the same!



# SEP variations on subjects with chronic constipation in hydropinic treatment with molecular signaling of water

A. Pisani, V.I. Valenzi, M.C. Lucchetta, M. Grassi, A. Serio, P. Avino, M.V. Russo, A. Fraioli

VII International Conference "Cosmos and Biosphere", 1-6 October 2007, Sudak, Crimea

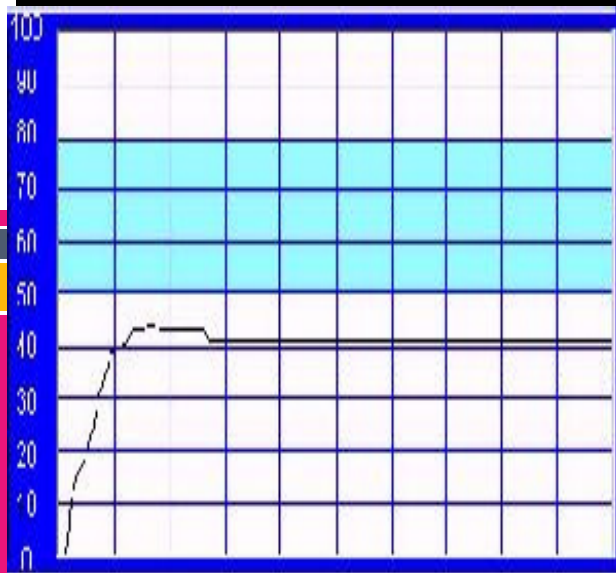


Skin Electric Parameters and molecular signaling of drug  
*DRUG EFFICACY AND/OR INTOLERANCE IN METEOROPATHIC OSTEOARTICULAR  
DISEASES WITH 8 FANS TESTED*

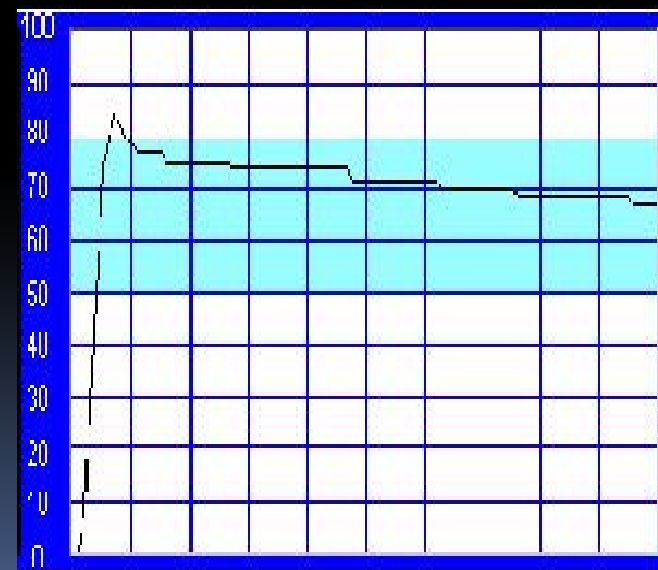
<http://web.tiscali.it/numedi/arc2002/0902/12.html>

V.I. Valenzi and M.L. Roseghini

**Without drugs**



**After Nimesulide 1,5 cm max far from body**



# Potential Vector

*The Potential Vector extends to a nearby large area, without transporting energy but just information, exerting a "fine influence", we could say "informatica", that alters the phase of the present coherent systems.*

*Giuliano Preparata & Emilio Del Giudice  
(Scienza e Conoscenza, 17/2006)*

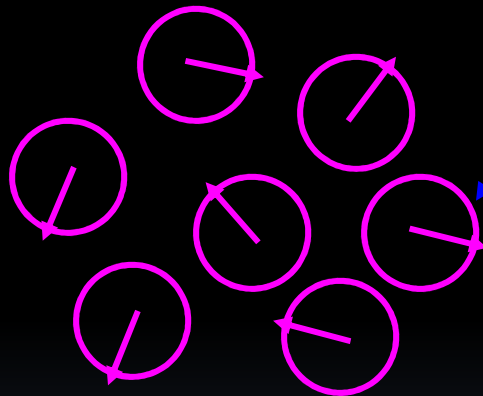
# Quantum Coherent Interactions

Luca Gamberale

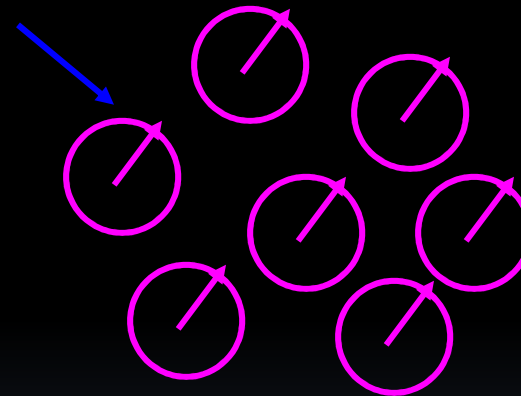
Pirelli Labs – Materials Innovation Advanced Research (Milano, Italy)

**N** scatters

**Quantum phase**



**Quantum incoherent**  
**Cross section like N**



**Quantum coherent**  
**Cross section like  $N^2$**

**$N \sim 10^{23}$**

**!!!**

# Vector Potential in Puthof's Patent

5845220

- *"with advent of quantum theory, however, the traditional picture change. In the prior art literature, the (vector and Scalar potentials  $A$  and  $\Phi$ ) formalism has emerged as more fundamental because it predicts certain quantum interferer effects that have been observed and are not apparent from the ( $E$ ,  $B$ ) approach. This difference was first set forth in an unequivocal way in a seminal 1959 paper by Ahfranov and Bohm, entitled **Significance of electromagnetic potential in the quantum theory**" Physical Review 1959 and 1961.*
- *In these papers it is shown that in certain two-leg electron-interferometer configuration in which the potential  $A$  and  $\Phi$  are established in a region of space, but  $B$  and  $E$  are absent . It is nonetheless possible for the potentials  $A$  and  $\Phi$  induce changes in electron quantum interference patterns.*
- *That is , electron that are in an electromagnetic field-free region and therefore do not encounter an electric or magnetic field are nonetheless acted upon by the presence of the  $A$  and or the  $\Phi$  potentials.*

# Vector Potential in Puthof's Patent(2)

- *Such an effect is now referred to broadly as a Aharonov-Bohm effect, and devices have been built which demonstrate this effect in laboratory. For a recent overview, see, Y Imry and R. A. Webb, "Quantum interference and the Aharonov-Bohm effect" Scientific American" 260 (April 1989).*
- *A second quantum interference effect demonstrates the independent reality of the  $(A, \Phi)$  potentials in the absence of the  $(E, B)$  fields (and one which is significant for the technology disclosed by Puthof) is a single-leg electron interferometer effect known as the Josephson effect; see R.P. Feynman, . The Feynman Lectures on Physics 1965) The Josephson effect is based on the fact that the current density  $J$  through a Josephson Junction ( which consists of two superconductors separated by a thin insulator) is determined by the magnitude of the potential  $A$  and  $\Phi$ , independent of whether  $E$  or  $B$  are present.*



# INFLUENCE OF A VECTOR POTENTIAL ON A HIV REPRODUCTION IN T-LYMPHOCYTES IN VITRO

Pokidysheva L.N., Trukhan E.M., Titova I.V., Miller G.G.

## Abstract

- The examination of a field free vector potential (VP) influence on HIV reproduction in a T-lymphocytes in vitro is presented. Two variants of the tissue culture cells, infected by HIV were used: a human peripheral blood Tlymphocytes (PBL) and a human T-lymphoblastoid cell line MT<sub>4</sub>. The cultures were exposed to a VP during 0,5 and 1,0 hour before or after they were infected by 100 units per cell of a lymphotropic strain of HIV(R5/LAV-1).
- Some effect of a VP on the mentioned above biological systems was revealed. Some distinctions of cell proliferation index (PI) between the PBL and MT<sub>4</sub> were found. Slight increase of PI in PBL may be conditioned by wide presentation of signal Toll-2 (IL-1) receptors on the cell surface, which induce the expression of early dividing genes, whereas they are very rare on the surface of MT<sub>4</sub> cell line. However the viral pathogenicity was higher in aMT<sub>4</sub> cell line. The phenomena required subsequent evaluation.
- Conference Yalta-Gourzuf 6 june 2008

# Pharmacoclinical implication

Terapia personalizzata??

WE CAN OVERCOME DRUG RESISTANCE EASILY WITH THE CHOOSE OF DRUG BASED ON IPERCONDUTTIVE EFFECT MEASURABLE DIRECTLY WITH

- OHM DEVICE
- KINESIOLOGY
- OTHER SYSTEM

BY THE WAY MEDICAL DOCTOR CAN CHECK THERAPY AND MANAGE RESISTANCE OF FANS, CORTISONIC, ANTISTAMINC, ANTIPERTISIVE DRUG ECC.

ANTIBIOTIC RESISTANCE NEED A SPECIFIC STUDY TO COMPARE ANTIBIOGRAM AND SEP (OR BAP) CHOOSE

# Controlled test double blind

- In the last study in preparation of double blind trial, we have observed in twenty allergic patients, that the association of an antihistaminic drug (loratidine, mizolastine, cetirizine ecc) whit a cortisonic drug (betametasone , mometasone, deflazacort ), driven from the SEP (Skin Electrical Parameter), give an 90/% of regression of the symptoms allergic (rhinitis, ecc). This results are obtained from patients, without intake of drug, but with the utilise of the drug for electrodynamics action, with application of the drug external to the body. The development of intolerance to the drug, seems strongly correlated to the fall of the conductance in the body. The substitution of drugs with the improvements the conductance, is correlate to immediate regression of intolerance and allergic symptoms.

# An international Project to manage the drug resistance?

- Proposal
- In the frame of Rome Conference on "Il mondo Cartesiano e il Mondo Olistico" 10 /06/2011
- After discussion on antibiotic resistance and drug side effects we decide to activate an international and interdisciplinary group on DRUG RESISTANCE, ELECTROMAGNETIC FIELD and new quantum approach to drug therapy finalized to
- **improve the ratio Risk/ a Benefits and Drug Therapy for a Driven Therapy**

# RISK/BENEFITS RATIO IMPROVED

- WE HAVE THE CHANCE TO RELANCE THE USE OF GREAT DRUG AS CORTISONIC, FANS, ANTIBIOTICS THAT TODAY IN THE TOTAL PARADOX ARE NOT USED WHEN THEY NEED MORE, FOR EXAMPLE AFTER DENTAL SURGERY, IN GREAT INFECTION AND INFLAMMATION ECC.

# COST/BENEFITS RATIO IMPROVED

- **THIS IS A REAL PROBLEM:**
- WE CAN LOOK FOR A PERSONALIZED THERAPY THAT CAN USE ALSO THE SIGNALLING OF DRUG IN SOME CASES AND SOME STATES OF PATHOLOGIES?
- WE CAN SAVE MONEY ?
- WE CAN DERANGE TRADITIONAL BUSINESS?
- **MAY BE YES . WE MUST FOR US, FOR OUR FAMILY, FOR OUR PATIENT, FOR OUR COUNTRY, FOR OUR SCIENTIFIC MISSION.**

# References

- **V. I Valenzi, B. Messina** Proceedings meeting on: *The role of quantum electro dynamics in medicine*. Rivista di Biologia/Biology Forum 93 (2000) pp. 267-312. <http://web.tiscali.it/numedi/arc2002/0902/12.html>;
- **V.I.Valenzi, G.Monaco, S. Spada, P. Cimaglia, L.Petraccia, S.Palmieri, B. Messina M.Grassi:** *Ruolo dei SEP (Skin electric Parameters) nello studio delle meteoropatie*, Annali di Medicina Interna, 2003: 18, 164S - Proceedings Congresso SIMI Vincitore Premio CECIL
- **A. Pisani V. I. Valenzi , M.C. Lucchetta, M. Grassi, A. Serio P. Avino, M. Russo, A. Fraioli** *SEP variations on subjects with chronic constipation in idropnic treatment*. VII Intern. Conference "COSMOS AND BIOSPHERE":1-6/X 2007Sudak Crimea- Benveniste Award
- **Allan Widom, Yogi Srivastava, Vincenzo Valenzi :** *The Biophysical Basis of Water Memory*. International Journal of Quantum Chemistry (Wiley and Sons), Published on line May 19, 2009[DOI: 22140];

# Debite on Coherence and quantum chemistry

- >>> <http://www.vimeo.com/10883097>  
>>> Colloquio con LARISSA BRIZHIK Istituto di Fisica teorica di Kiev
- >>> <http://www.vimeo.com/10761564>  
>>> Colloquio con Vladimir Voeikov Chimico Organico Lomonosov University Mosca
- >>> [www.colombre.it/montagnier](http://www.colombre.it/montagnier)  
>>> Colloquio con Luc Montagner
- >>> <http://vimeo.com/11108801>  
>>> Colloquio con Settimio Grimaldi - CNR  
Roma Involves Francesco Bordino.