Physics on Cancer and Its Curing

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Abstract

The conventional model did not take momentum conservation into consideration when the electron absorbs and emits the photons. Π-ray provides momentum conservations on any directions of the entering photons, and also the electrons have radial momentum conservations and fully elastic bouncing between two atoms, in the new atom model. Conventional atom model must be criticized on the following four points.

(1) Natural motions between positive and negative entities are not circular motions but linear going and returning ones, for examples sexual motion, tidal motion, day and night etc. Because the radius of hydrogen atom's electron orbit is the order of 10^{-11}m and the radia of the nucleons in the nucleus are the order of 10^{-14}m and then the converging π-gamma rays to the nucleus have so great circular momentum, the electron can not have a circular motion. We can say without doubt that any elementary mass particle can have only linear motion, because of the π-rays' hindrances, near the nucleus.

(2) Potential energy generation was neglected when electron changes its orbit from outer one to inner one. The $h\nu$ is the kinetic energy of the photo-electron. The total energy difference between orbits comprises kinetic and potential energies.

(3) The structure of the space must be taken into consideration because the properties of the electron do not change during the transition from outer orbit to inner one even though it produces photon.

(4) Total energy conservation law applies to the energy flow between mind and matter because we daily experiences a interconnection between mind and body.

An understanding of the mechanisms responsible for the control of normal proliferation and differentiation of the various cell types which make up the human body will undoubtedly allow a greater insight into the abnormal growth of cells, A large body of biochemical evidence was eventually used to generate a receptor model with an external ligand binding domain linked through a single trans-membrane domain to the cytoplasmic tyrosine kinase and autophosphory-lation domains. The ligand induced conformational change in the external domain generates either a push-pull or rotational signal which is transduced from the outside to the inside of cell.

Key words: Cancer, π-bonding, π-far infrared rays, epidermal growth factor

1. THE CRYSTALLIZING Π-BONDING

The crystallizing π-bonding [Ref.1, Ref.2] produces two π-rays of one wave length during the electron's going and receiving trip between two protons and makes an electron, a positron, a neutrino and an antineutrino disappear at the end of the trip as in Fig.1.

During the electron's going trip between two protons two π-rays of one wave length starts to produce. During the electron's receiving trip the two π-rays of one wave length finishes to produce.

The two π-rays of one wave length are supplied and absorbed to the proton. The π^{o} mesons produce implosion bonding between proton and neutron in this case.

There are four kinds of π-bondings between the protons, closed π-bonding, open π-bonding, covalent π-bonding and ferromagnetic π-bonding.

The closed π-bonding makes the protons fixed and only one electron moves between two protons of the attended ones. It produces two π-rays during the going and returning trip. Conventional metallic bonding belongs to this bonding.

The open π-bonding is an instantaneous bonding between two protons. The one of the two protons supplies an electron. It produces π-rays and then disbonds soon after. The signal transduction of the neuron belongs to this one.

The covalent π-bonding makes two electrons move between two protons and does not produce π-rays. It belongs to conventional covalent bonding.

The ferromagnetic π-bonding makes electrons circulate towards only one direction via the closed π-bonding protons and then produces magnetic moment. But it does not produce π-rays.

Conventional van der Waals bonding corresponds to the open π-bonding and the conventional hydrogen bonding also belongs to the open π-bonding. Conventional ionic bonding gives electrons to the other atom.

2. ABNORMAL TRANS-MEMBRANE SIGNAL IN CANCER CELL

An understanding of the mechanisms responsible for the control of normal proliferation and differentiation of the various cell types which make up the human body will undoubtedly allow a greater insight into the abnormal growth of cells. Particular attention is now focused on the role of polypeptide growth factors as molecular which may play a central role as both positive and negative regulators of normal and abnormal growth control and development.

A large body of biochemical evidence was eventually used to generate a receptor model with an external ligand binding domain linked through a single trans-membrane domain to the cytoplasmic tyrosine kinase and autophosphorylation domains (Fig.2).

The ligands induced conformational change in the external domain generates either a push-pull or rotational signal which is transduced from the outside to the inside of cell. The ligand gives electron pairs to the receptor and the electron pairs are energy-leveled at -bonding orbitals by ligand field theory. Abnormal signal without ligand

reaction in cancer cell is from the microstructure of the crystalline receptor material (abnormal proteins)[Ref.3], which is elastically anisotropically channeled by the lesions of its related DNA (its stressing, oncogenic virus and various kinds of carcinogens). The -helical polypeptide structures of the receptors (Fig.3) can be packed by nitrogen atoms, which have remaining electrons and make three-dimensional crystallizing combined π-bonding orbitals (Fig.4(a) and (b)). They may be square, hexagonal and combinations of square and hexagonal. They are such as FCC, BCC and HCP of metallic crystal structures. Polypeptidic -helical amino-acids in liquid state can be packed in solid-crystallized state by the three-dimensional crystallizing combined π-bonding orbitals in such a way that the liquid metal be solidified by the crystallization.

If the nitrogen atoms are packed by the crystallization they pull any kinase without the ligand-induced conformational change by the crystallization attraction force.

It is thought that the normal ligand-induced conformational change makes an elastic anisotropic channeling of square, which pull the kinase (normal signal).

3. DISTRIBUTION OF NOES IN THE PROTOONCOGENIC AND ONCOGENIC FORMS OF THE NEU PROTEIN

The three dimensional structure of the trans-membrane region of the proto-oncogenic and oncogenic forms of the neu protein is shown in Fig.5 [Ref.4].

The NMR results in Fig.6 show that the proto-oncogenic and oncogenic structures are both helical and are, within experimental limits, essentially identical. There is no evidence for any gross distortion of the helices dependent upon the type of amino acid side chain of residue 12. These results therefore do not support the model involving local conformational difference between the mutant and wild-type receptors. In the NMR work reported here however, no direct evidence was found in support of dimerization of either peptide. Evidence for dimers might have been detected through anomalous NOEs and the observation of differences following ionization of the glutamate side chains since this would be expected to disrupt the putative inter-molecular hydrogen bonds between them [Ref.5].

The model building shows that the structures determined by NMR are quite capable of forming the proposed -helical packing. The increased numbers of NOEs in amide residues are caused by three-dimensional crystallizing combined π-bonding orbitals of the packed nitrogen atoms. The polypeptidic -helical amino-acids in liquid state can be packed in solid-crystallized state by the three-dimensional crystallizing combined π-bonding orbitals in such a way that the liquid metal be solidified by the crystallization.

If the nitrogen atoms are packed by the crystallization they pull any kinase without the ligand-induced conformational change by the crystallization bonding force.

The increased numbers of NOEs in side chain

residues in Fig.6 might be caused by a packing of the atoms, in which the atoms have remaining electrons and make the three-dimensional crystallizing combined π-bonding orbitals.

4. ABNORMAL TRANS-MEMBRANE SIGNAL AND π-FAR INFRARED RAYS IN CANCER CELL

Lysine 721 of the EGF receptor participates in ATP finding and is essential for enzyme activity(Fig.6).

Mutagenesis of this residue has demonstrated that, although ligand binding properties are not altered, all measurable cellular responses to EGF are abrogated. Therefore, tyrosine kinase activity following ligand finding is essential and the first step in the EGF signal transduction pathway. Recently, substantial progress has been made in identifying tyrosine kinase substrates that have known biochemical functions. This permits construction of a potential mitogenic signaling pathway(Fig.7).

This map depicts five proteins as tyrosine kinase substrates (PLC-Υ1,PI-3 kinase and raf kinase). Two others, lipocortin I and C-erb B-2 are not represented. A normal EGF signal transfers from ligand binding through trans-membrane and tyrosine kinase to tyrosine kinase substrates.

The abnormal signal occurs at the trans-membrane without any ligand binding of EGF, which is produced from the abnormal crystallization of the trans-membrane molecules and is called as the π-far infrared rays. If the plus irons at the circumferential line satisfy the three-dimensional crystallizing π-bonding condition, the atoms make the bonding and then reproduce the π-far infrared rays. The molecules in the trans-membrane offer the bonding atoms and then the signal pathway. If the trans-membrane molecules become abnormally crystallized, they produce abnormal signals (π-far infrared rays), which are transferred to the tyrosine kinase.

5. CATALYTIC ACTIVITIES IN ENZYMES AND SIGNALING OF π-FAR INFRARED RAYS

A catalyst is a substance which increases the speed of a chemical reaction without itself undergoing change[Ref.6]. How do catalyst increase reaction rates? Metallic and non-metallic catalysts increase reaction rate by making the crystallizing π-bonding orbitals with the reactants on the surface of the catalyst, which reduce the distance between reactants and then induce chemical bonding.

The tyrosine kinase receives the signaling of π-far infrared rays from the transmembrance and then make three-dimensional crystallizing π-bonding with the substrates and reproduce π-far infrared signals, which flow down the next substrate kinases. The substrate kinases activate the next processes. Because the π-far infrared rays wander about in the material and free space, the cancer at the end era propagates all over the body.

6. PHYSICS FOR CURING CANCER

In order to cure cancer, the abnormal signal of π-far infrared rays must be stopped to be produced or to be supplied.

First proporsal is to break down the three-dimensional crystallizing π-bonding of the abnormal trans-membrane structure, which can be realized by heating the structure or destroying the bondings by radioactive rays.

Second proposal is to weaken the function of enzyme by using specific medicines in addition to the above physical treatments.

Any new technologies must be discovered for absorbing the abnormal π-far infrared rays from outside, or changing them into any sound π-rays.

It is the alternative and complimentary medicine which does not hurt patient's health. The π-ray does a helically advancing motion in human body as in Fig.8 just like the refraction of the photon in the material.

7. CONCLUSIONS

(1) The structures of the oncogenic proteins determined by NMR are quite capable of forming the proposed α-helical packing in comparison to the protooncogenic structure, which are produced by the crystallizing π-bondings due to the internal and external causes.

(2) If the trans-membrane molecules become abnormally crystallized, they produce abnormal signals(π-rays), which are transferred to the tyrosine kinase.

(3) Metallic and nonmetallic catalysts increase reaction rate by make the crystallizing π-bondings with the reactants on the surface of the catalyst, which reduce the distance between reactants and then induce chemical bonding.

(4) In order to cure cancer first proposal is to break down the crystallizing π-bondings of the abnormal trans-membrane structure by physical treatments and second proposal is to weaken the function of enzymes by using to specific medicines in addition to the first physical treatments.

Third proposal is to absorb the cancer signal(π-rays) or changing them into any other sound π-rays, which are the alternative and complimentary medicine.

REFERENCES

1. HUNG-KUK OH, "Conventional metallic Bonding and Three-dimensional Crystallizing π-bonding", Journal of Materials Processing Technology, 69(1997) page 134-147
2. HUNG-KUK OH, "Vortex of Electrons, π-bonding of Atoms and Superconduction, Journal of Materials Processing Technology, 7411-3(1998) page 126-130
3. HUNG-KUK OH, "Cause on Abnormal Trans-membrane Signal in Cancer Cell", 94 Proceeding of the 18th workshop on high Temperature Superconductivity, South Korea, page 146-150
4. W.J. Gullick et al., "Three-dimensional structure of the transmembrane region of the protooncogenic and oncogenic forms of the new protein", The EMBO Journal vol.11, page 43-48, 1992
5. Sternbery, M.J.E. and Gullick, W.J.(1989) Nature 339, 587
6. HUNG-KUK OH, "Theoretical Basis on catalytic action by Three-dimensional Crystallizing π-bonding Orbitals", Behaviors of Three-dimensional Crystallizing π-bondings in

Engineering Science, AJou university Press 1995

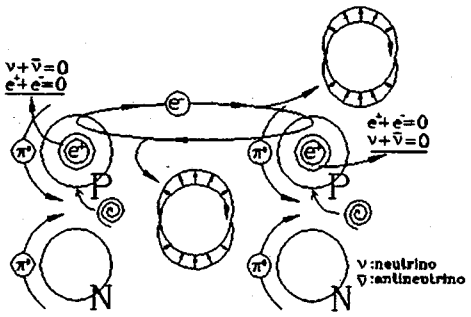

Fig.1 Crystallizing π-bonding

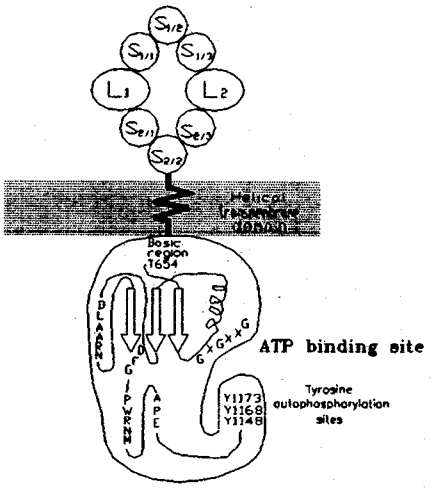

Fig.2 A model for the structure of the epidermal growth factor

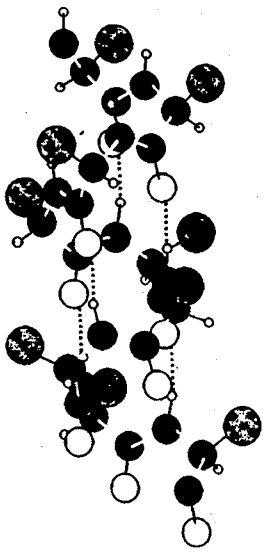

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Fig.3 -helical polypeptide structures

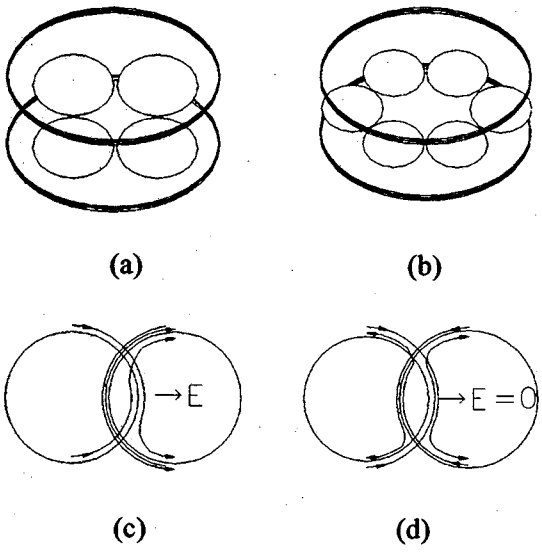

Fig.4 Mechanism of conduction and superconduction between one new metallic bonding orbital and the next
(a) square unit set of new metallic bond
(b) hexagonal unit of new metallic bond
(c) conduction
(d) superconduction

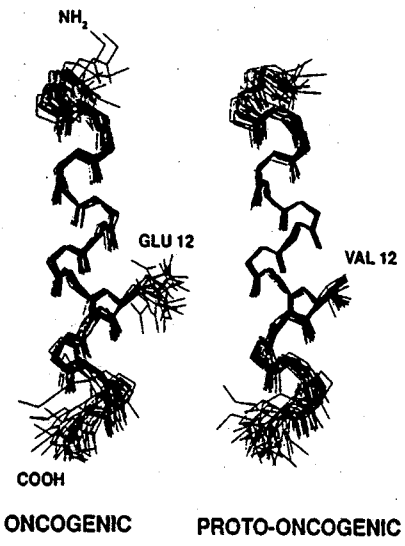

Fig.5 Twenty-two oncogenic and 22 proto oncogenic

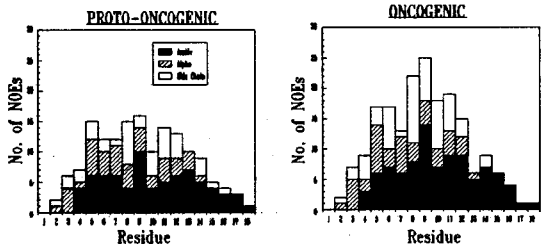

Fig.6 Distribution of NOEs used in structure calculations. Each atom involved in an NOE is indicated : for example an H-NH restraint is recorded for both the and the amide proton

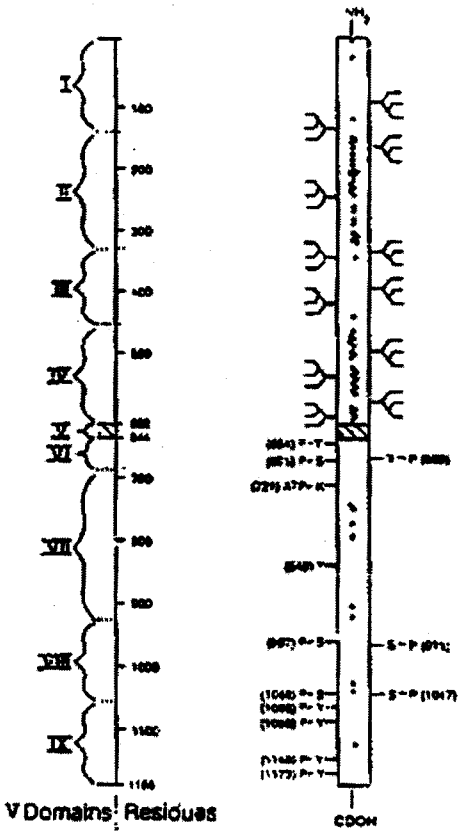

Fig.7 Depiction of the known features of the mature EGF receptor

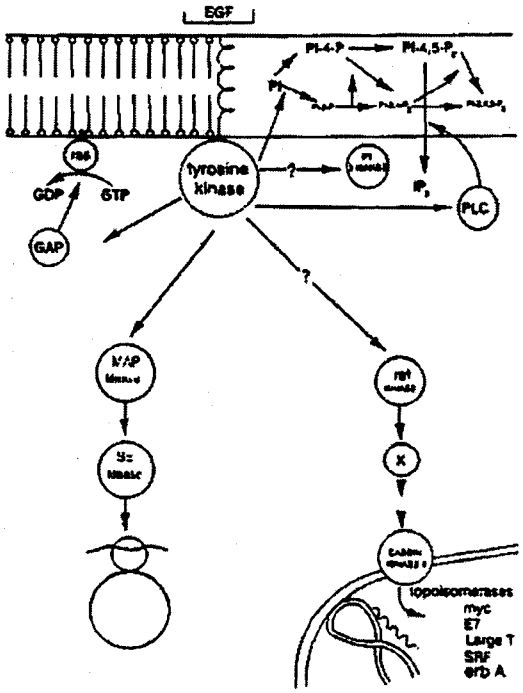

Fig.8 Tyrosine kinase substrates and pathways for signal transduction

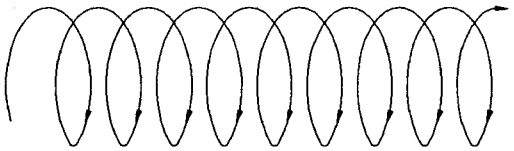

Fig.9 Helical motion of π-ray in human body