# THE FUNCTIONAL CARBONYL GROUP IN PATHOGENESIS AND ITS REVERSAL

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## INTRODUCTORY STATEMENT

In tissue chemistry there is scarcely a reaction that does not involve or produce a Carbonyl group as an intermediary or as an end product. And yet its significance in energy production has been overlooked, except in a passing way, by nearly all biochemists. Many Carbonyl groups do not hold vitally critical positions, and indeed only a few are of deep interest to us. However, these take preference above all other Carbonyl groups in the tissue metabolism by the fact that they are "activated." By activation, we mean that their inherent properties have been accentuated, giving them the advantage of being able to carry through all the reactions they are disposed to mediate.

One property is the electro-negativity they possess by virtue of being able to attract and accumulate electrons in the carbon-oxygen double bond. These are mobile electrons, and are designated by the Greek letter (pi), which are enhanced by migrations of electrons from other electron-contributing groups in the molecule, and by electron attracting groups that influence external electrons. For our short discussion, we must avoid the many other associated properties though they admit of mathematical expression and hold a great theoretical interest. Those that we will deal with are of high interest to us in matters of health and happiness, our ability to maintain good vitality, and because of the place they hold in the cure of all forms of disease, as it affects all cellular life from the smallest microorganisms to the highest adult tissue cells. They hold the position of a Least Common Denominator by initiating the normal aerobic metabolism of function and nutrition and hence, their unabridged activity eliminates parasitism in microorganisms, tissue cells, and in the virulency associated with pathogenicity.

They thus hold a key position in the great biological economy, and this is due to the fact that they serve as the initiators of oxidative energy production for function and nutrition. And when not blocked in this action, they do away with the need for parasitism in microorganisms and in tissue cells and thus, when this ability is restored, pathogenicity is eliminated from bacteria and neoplasia can no longer exist in the tissue cells. So the best way to get rid of infectious disease and neoplasia, is to cure the germ or tissue cell of its metabolic deficiency. The purpose now is to show how that is done.

## SOLUTION BY DATA FROM THE PARATHYROID INSUFFICIENCY PROBLEM

This study was started over a half century ago when present day techniques of high refinement did not exist, nor did the established theories on atomic structure that are in common practice today. I had to accept the data I met, and it was necessary to interpret it on the basis of the crude results that I was able to elicit.

It was back in 1912, when this writer was given a position of opportunity at the University of Michigan's Laboratory, by providing the facilities to investigate the function of the parathyroid glands. This subject, previously investigated by the eminent physiologist Carlson of the

University of Chicago, as well as by others, had reported that the parathyroid glands controlled the calcium metabolism of the body. They based their conclusion on the finding that the fatal convulsions, which followed removal of these glands could be ameliorated by injections of calcium solutions, and because excessive amounts of calcium were eliminated in the urine during parathyroid deficiency.

However, it was evident to me that other solutions of salts, as sodium chloride and even distilled water also ameliorated the convulsions, but only so long as the kidneys could eliminate and the same fact held for the calcium injections, as well. So it was evident that the benefit came from washing a toxic convulsion producing substance from the blood, until other changes took place, which blocked the liver and kidney functions. I therefore set out to isolate the toxic substances from the urine that caused the convulsions and the other fatal changes observed at autopsy. These were primarily a loss of the colloidal dispersion of the blood contents, so that they separated as striated clots in the large veins and capillaries before death took place.

Analysis of the urine after the parathyroidectomies yielded two toxic bases, Methyl-guanidine and guanidine; both were present in fatal amounts causing the fatal convulsions along with the other pathological changes. The results were published in the *Journal of Biological Chemistry* of 1912 and 1913, and were fully confirmed three years later by the Department of Physiology of the University of Glasgow, and for the excellency of their work in this confirmation they were awarded the Triennial Prize in Medicine from Harvard University. My work was thereby confirmed, and I set about learning how guanidine did its mischief.

One significant finding was that the urine carried large amounts of lactic acid, which meant that the oxidation mechanism was too badly handicapped to provide the energy for the tissue activities, including the convulsions. So, too, the autopsy findings of striated blood clots meant that the tissue colloids were not sufficiently charged to give them good dispersion, especially in the blood, which let the elements settle out and also reduced their fluidity and carrying power of oxygen, calcium, and other elements. So the sum total meant that the guanidine bases blocked the oxidation mechanism.

Two facts stood strikingly in mind, namely that the amine groups of guanidine were highly activated by conjugation with the imide group, which made them highly reactive toward condensing with Carbonyl groups to form azomethine condensations, whereas, when the nitrogen atom of the imide group was replaced by oxygen as in urea, these urea amine groups were nontoxic, and did not bother anything. The second striking fact was that Carbonyl groups could inactivate them. So it appeared that guanidine had, with its two-amine groups, condensed with and inactivated two united carbonyl groups. So one provisionally concluded, that guanidine had blocked the tissue oxidations and thus the tissues that survived the longest after parathyroidectomy, were the richest by being provided with a two chain Carbonyl group system that started the tissue oxidations, and the longest surviving tissue was observed to be the heart muscle. So in the heart muscle, I expected to find an activated Carbonyl group, as referred to previously, a group that took the preference over all the other Carbonyl groups as a dehydrogenator, for the double bonds of each adjacent Carbonyl group must activate the other, and increase the electron content in its small area.

So I concluded that heart muscle carried the two adjacent systems of Carbonyl groups, (one may look upon this system as one in which the double bonds of one Carbonyl group are conjugated with those of the adjacent Carbonyl group, by the covalent bond in between.) The next step was to see if such a Carbonyl system aided an inhibited oxidation. It was found that after removing the pancreas no changes took place, for indeed the pancreas had to remain in the animal, and that the pathology was essentially there, and not in the tissues in general.

It appeared also that in cancer growth there was no appreciable function, as seen also in their anaplasia, so evidently the Carbonyl system was absent. Indeed the Carbonyl activation could be conjugation with other double bonds as of an ethylenic linkage; so we treated far advanced terminal cases of cancer, in three instances, where early autopsies were expected so I could study the changes that followed administration of the activated Carbonyl groups. Extracts of heart muscle were used and the responses confirmed the Hypothesis. All three patients recovered. Then the smallest possible molecules, with Carbonyl activated by conjugation with other Carbonyl group's double bonds and with ethylenic double bonds, were also fruitful. The heart muscle extracts were reported in the Medical Record of New York, on October 30, 1920. However, any further attempts to publish any subsequent reports were blocked, at the request of the Journal of the A.M.A., so that the official medical journals refused me the right to report my findings. This blocked further contact with the profession in the official literature, so when the "Cancer Quack Conventions" of the A.M.A. annually proclaimed that the sign of the quack, is his refusal to report his work in official journals, they were putting on a gigantic fraud. It was so in my case.

The patients treated with Glyoxal and Methyl-glyoxal and by Parabenzoquinone, as the molecules offering least steric hindrance, were put into use in 1918, and especially in 1919, in the "Official A.M.A. Wayne County Medical Society Investigation" of the Treatment, and then later were augmented by the use of longer chains of carbonyl groups as in Rhodizonic acid, triquinoyl, and in other long straight chains, all of which are described in the text, "SURVIVAL FACTOR IN NEOPLASTIC AND VIRAL DISEASES." The object was to build up the highest Carbonyl negativity possible, and indeed, in triquinoyl this is attainted to such a degree that the electron content is so high that the molecule is highly unstable and one of the Carbonyl tends to jump off and reduce the electron tension.

Later, we produced diphenoquinone in which the two Carbonyl groups are widely separated, but five intervening ethylenic linkages are in conjugation. This molecule has an oxidation-reduction potential of 0.954 volts, as compared with that of Parabenzoquinone with its good 0.7 volts. Obviously, the dehydrogenating power here is all that is needed to dehydrogenate any member of a biological system, and the dilution of the former must be made appropriately higher than that of Parabenzoquinone for treatment uses.

Using the most vigorous dehydrogenators may cause such a rapid breakdown of the large cancer masses, so that when these products are absorbed more rapidly than the destroyed areas can be healed through normal parenchyma, and when the blood vessel walls are also involved, serious bleeding can take place. It is therefore advisable to use high dilutions of such substances as Glyoxal, Methyl glyoxal, triquinoyl and diphenoquinone, which are used in concentrations of preferably 10-(9), or 10-(12), and even as high as 10-(30) concentration; whereas, Benzoquinone

can be used very nicely in 10-(5) and 10-(6) concentrations.

And even though the cancer tissue undergoes rapid lysis and adsorption, the process is not a destructive one, but a corrective, constructive one. The reason for a highly rapid disappearance of a malignant tumor, instead of a slower one, is that more cancer cells are being corrected and absorbed than the healing power can compensate for within a given time. Likewise, in cases that have been heavily irradiated with cobalt isotopes, radium, or X-rays, the rapid absorption of the irradiated material may be too great in amount for the patient to contend with systemically, and such cases should be treated with great care, if at all.

Recent cases of cobalt application should not be treated, and time must be awaited until the cobalt effects are worn out, as seen by the recurrence of neoplastic progress, in the treated lesions.

All of these troubles we avoided by taking our time. Indeed, once the recovery is started it tends to go on as a chain reaction until all traces of neoplastic tissue is digested and absorbed, and understanding that the recovery process is based on the phenomena of the Free Radical, we clear the field of all interfering factors, and let the recovery go on leisurely to completion. So it was when I treated the five officially chosen terminal cases of cancer that served as test cases in the 1919 "Official A.M.A. (Wayne County) Investigation;" "I was satisfied to give only one injection of the Remedy and await the results. These results came quicker than the "official A.M.A. surgeon committee" had expected, and upon seeing a man of 72 years of age, once covered and filled with countless masses of sarcoma, one member of the "official committee" panic stricken by the rapid absorption of the cancer growths, advised him to 'hurry back to his home 300 miles away, for if Koch gave him another dose, he would melt away just as the growths did.'" He lost no time in leaving; later it turned out that he was cured, for many years afterwards, patients came from his hometown, because of the benefits he had received from the Treatment.

Likewise, the other four cases made such startling improvements from their suffering hemorrhagic, cachectic conditions, that the rest of the "committee" went panicky and closed the "Investigation" sending the patients back to their distant homes, even to other states, with the warning that they were forbidden to receive any further Treatments from Koch. However, the phenomena of the chain reaction based on the Free Radical properties kept on working and three of these patients were completely cured. One of them, which I observed for 15 years, a stretcher case when brought into the ward, lived 15 years in perfect health and died as the result of an accident that fractured her skull. But though there were at least 60 percent, or most likely 80 percent of the patients cured, the "official A.M.A. committee" reported that "nothing came of it," and has denounced me ever since as a quack. Then four years later in the fall of 1923, I asked the Medical Society to change their false report to conform to the truth; they refused and abused my effort with further innuendo and falsehoods.

My Thesis suffered further violence following the demonstration of its therapeutic efficiency in Brazil in the summer of 1941, when under the auspices of the Medical Faculty of the University, as led by Professor Renato da Souza Lopez, we cured moderately advanced leprosy, advanced cavitary tuberculosis, terminal cases of cancer of the liver and stomach, terminal cases of

rheumatoid arthritis, diabetes, and incurable terminal insanity. The Drug Monopoly, led by a representative of a major drug company, Parke Davis, threatened me with utter extinction so that I would never interfere with their affairs anymore. Three weeks later, I was ordered by the U.S. Food and Drug Administration to return to Washington to discuss my labels. I went and on Good Friday of 1942, I was indicted in Detroit, by a secret and closed Grand Jury without my presence or knowledge, for fraud and arrested at my home in Florida the same day. It was only recently, from a member on that Grand Jury, that I learned the indictment was won on the testimony of two chemists, working for that same major drug company, who had sworn that my Therapy was a fraud and nothing more than distilled water.

The next morning at the bail hearing, the District Attorney of Miami requested a $10,000 bail, which the judge thought excessive and required an explanation. The D.A. answered, "Last night the D.A., in Detroit who won the indictment, phoned me to insist on a $10,000 bail as Dr. Koch had started work in Brazil and we do not want him to go back and finish it." And then turning to me with a grin of glee he said, "And when the U.S. Government gets through with you, Koch, you will be all washed up and not able to go anywhere." The bail was reduced to $5,000.

In support of the Drug Monopoly's power over the bureaucracy's corruption, the statement of the Assistant Attorney General from Washington, who managed the first five-month trial, is significant. On seeing that he would lose the case, he shouted at me before a crowd, "Koch, we went after you the wrong way this time, but we have ways that never fail, and we will keep after you until you are dead, or we have you in jail for the rest of your life, and nothing can stop us."

The next event was the attempt to murder my patient, Mrs. Worley, by an FBI agent, who was at the same time the leader of the notorious Detroit's Purple Gang. It is my understanding that the FBI had planned to pin the murder on me. But she recovered from the attack and even identified her assailant; however, he was not bothered and nothing came of it, except that I was out of danger of a murder indictment. (Mrs. Worley was not scheduled as a witness on Dr. Koch's behalf, but one day attended the 1st Trial and recognized her assailant sitting in the courtroom. Luckily, she was seated next to her hometown sheriff at the time and informed him of the situation, but as he got up to approach the assailant, the man quickly left through a side door. Several government officials standing in the hallway then stopped the sheriff from following him any further. The sheriff explained the situation, but the agents rebuffed his concerns). The A.M.A. anti-quackery fraud certainly keeps bad company!

The first of all scientists to demonstrate the existence of the Free Radical in Chemistry was Dr. Moses Gomberg and he demonstrated its salient properties. This was back in 1900, when he was Professor of Chemistry at the University of Berlin. In 1910, he was my Professor at the University of Michigan. His finding, which was the most important of the century, was much discredited for years and him with it until the plastic industry, that it is based on, grew to become a financial giant. But up to 5 or 10 years ago, interest in the Free Radical was held practically—only by a few gas-phase kineticists, and plastic experts. The medical and biochemical professions had entirely passed it by and from that year up till now, to speak of, the Free Radical, to them, was an invitation for abuse.

Indeed, as recently as 1946, Dr. Willard Dow, President of the Dow Chemical Industries and an

expert in Free Radical Chemistry, stated — "Koch is so far ahead of the thinking of his profession that he is not understood and they even ridicule him at times."

So to get my Thesis across was absolutely discouraging and even dangerous. Indeed it was on Dr. Mitchell's advice, (longtime Chairman of the Board of Trustees of the A.M.A. who had personally investigated the Treatment and with curative results) that I kept silent about the Therapy; he told me earnestly in 1924, that I should never tell the basic facts of my Thesis, for they could not be understood by the profession and their experts and they would know no better than to brand them as base frauds, —my most precious truths would ruin me, in a court trial that the Journal of the A.M.A. was waiting to put me through. They would jail me and put an end to the work. In fact, this is what the bureaucratic contingent of the AMA's conspiracy actually tried to do in 1942 and 1946, in two, five-month Federal Court Trials of daily sessions. But fortunately, I had kept my precious Free Radical Thesis under cover and the conspiracy lost in its attempt, both times. Thereafter, I tried out the Free Radical Thesis on men who should have been interested, but it was not until the Great Szent Gyorgyi spoke of a possibility of free radicals having something to do with cancer five years ago, that the profession took a deep interest in it, and now every advanced laboratory world-wide is making wonderful progress with the investigation of Free Radicals. In fact, recently the Henry Ford Hospital of Detroit announced the discovery of a Nitrogen Free Radical as diagnostic of cancer, using the electron spin resonance spectroscope technique as the means of finding it. So our earliest work of a half-century ago, is meeting with successful confirmation today.

What is the position of the Free Radical in carcinogenesis and its reversal? Please recall that the activated Carbonyl group of function, the FCG for short, dehydrogenates fuels and pathogens that enter its field to oxidatively destroy them to liberate energy. If now the dehydrogenation of a virus or carcinogen takes place, in the absence of adequate oxygen, the Free Radical that is formed must add to something other than oxygen and the closest position it can take is one of the poles of the double bond's that activates the FCG, and here it makes its addition and thus becomes integrated with the energy-producing mechanism. If it is a virus that makes the addition, it is in a favorable place to take energy from the host cell to support its vegetation, and after the cell is exhausted of energy and material, the viral progeny are set loose to swarm outside and infect other cells.

However, cancer cells, themselves, undergo many reproductions while the virus is living in a state of symbiosis, but these cells liberate a comparatively small amount of the viral progeny. Of course, when the cancer cell dies and breaks up, the viral colony is liberated and free to infect other cells of the same type. Even the paralyzing viruses may not always cause a lytic destruction of the host cell, but may live in symbiosis with it. The Free Radical union inactivates both, they hold as we described.

They behave 'as if dead,' as neither can receive the energy required for activity. This situation is described in the SURVIVAL FACTOR text. However, both are alive and when a sufficiently, energetic, Carbonyl dehydrogenator comes along it dehydrogenates the pathogen at its point of integration, and from here the free radical formed adds molecular oxygen which is then split off leaving the host cell in good functional status, while the virus is further oxidized destructively. The return of function of fully paralyzed and atrophied limbs, in some cases for as long as 20

years, back to their original state of perfect muscle construction, demonstrates this fact.

Evolution is a subject of many conflicting and imaginary theories. But one thing is certain that every physician must know. It is that no species can evolve into another species, as the proteins of each are most exquisitely so different that they mutually destroy each other on contact, either by a lytic or an agglutination process. So no species can develop into another or ever hybridize with it. However, the patterns of many vital processes may be held in common by many different species, each modified somewhat, to accommodate an adaptation to the environment in which it has to survive.

The oxidation process is an example where a common pattern is evident in many species, all the way from the simplest microorganism to the most differentiated cell of mankind. We described it before. This is not an evolved affair but a universal creation common to aerobic life. Then it is also evident that any interference capable of blocking the oxidation mechanism of one species may also have the same effect on some other species. The inactivation of the functional Carbonyl group of a microorganism may also follow the same pattern of interference as in a human tissue cell. And consequently, the pattern of removal of the interference should apply in both, in the like manner.

And then too, the restoration of an efficient oxidation pattern, as we have described, must restore both function and nutrition so parasitism is no longer possible. Virulence is also eliminated, since there is no need to attempt survival by cell reproduction. This Thesis is demonstrated abundantly in the Survival Factor text.

Two examples taken from it will demonstrate the thoroughness of its proof.

The first exhibit is a culture plate divided into halves to accommodate the test culture on one side and the control culture on the other. Both were seeded equally with highly virulent hemolytic streptococcus taken from a child, and they were also highly antibiotic resistant. The test culture was exposed to a solution of the reagent, of the text, carrying serial systems of Carbonyl groups, diluted one part to a billion parts of water in an amount of only one cubic centimeter. The control culture was not disturbed. They were incubated for two weeks and thereafter it is seen that the control culture was heavily invaded with the streptococcus, while the test culture was free. Thus the Reagent wiped out the virulence. Many tests of the filtrates from such cultures have been made and while the test cultures are nontoxic, the control cultures in equal dilutions are fatally toxic. So the restoration of the active Carbonyl facility restores health to the organism. It no longer shows virulence or pathogenicity. Observations on living animals show a return to normal biological function.

The other exhibit is of a baby girl, of only 4 months of age, who on exploration of the abdomen was found to have a Grade IV primary cancer of the liver, 80 percent of which was involved, and of course, the whole abdomen besides. She was given the same dosage of the same Reagent used on the culture plate. Here the pathogenicity, virulence, and parasitism, of the tissue cells are seen to reverse to normal by a chain process, mediated by the Free Radical sequences, initiated by an activated Carbonyl group. The chain reaction was not completed until every vestige of neoplastic tissue had been reversed to normal, and then digested and absorbed as food material, which of

course, nourished the baby. The photographs show the steady progress of this reaction complex to full normalcy, and of course, completely and permanently on only one dose of the Reagent in a terrifically high dilution—one part per billion. Two months ago she was happily married. So here, in animal tissues, the restoration of Carbonyl energy produced function is seen to dispose of neoplasia with its pathogenicity, its virulence, and its parasitism.

## THE PROFESSIONAL-POLITICAL SITUATION

Evidently, the Created Pattern of Aerobic Life includes a Redemption Principle of Protection expressed as tissue instinct and issuing from an Infinite Wisdom, which any observing biologist must recognize. The complex is Triune, embracing the cardinal features of Christianity. In fact, the first lessons in therapeutics were given by the Good Creator, Himself, in the Garden of Eden when He told mankind to look to the plants for their cures of the diseases that would come on them. So I searched for the evidence and found it, in six trees, two in each: Africa, Australia, and Brazil. These are curative in cancer and other diseases, as is evident in the chemical structure of each, as they all conform to the rules of structure laid out in this Thesis, even though the Australian and African products have not been identified with any medicinal properties. But the two Brazilian products have been used from time immemorial by the natives for cancer and all other diseases with success. The chemical structure of the Brazilian product has not been worked out, except as by myself, and published some time ago in the German Edition of the Survival Book, and also in the English edition. They are all chromophoric, quinones, naphthoquinones, and exist as Para and Ortho tautomeres.

They thus present Carbonyl activated by adjacent Carbonyl groups in the Ortho forms and by ethylenic conjugated linkages in the Para forms. These we have found to be curative in cancer and infections for many decades, as well as, in the terrible degenerative diseases such as Friedreich’s ataxia and multiple sclerosis, which are recognized as incurable.

So here too the Good Redeemer Creator has given us activated Carbonyl groups, as the first lessons of Religion that we practice as medicine. A leading U.S. Senator a few decades ago appealed to the Lord for help when he was going hopelessly blind. His cure was the practice of Religion, for I gave the injection that cured him. But he feared to identify the humble, discredited agency of his blessing, in the face of an opposing powerful Drug Monopoly. Hence, men must organize a strong committee to give strength to the legislators who tremble always before the drug racket.