Growth Mechanism of Coronavirus

(How to Stop Spreading of COVID-19)

April 21, 2020
Hoe S. Kwon

Abstract

Two proposals are made to stop spreading of COVID-19 pandemic. One is cutting off the supply of saturated fat and excess protein to the infected to stop virus growth and thus cure the patient. Specifically, minimizing consumption of red meat and greasy food full of fat in every day meals is the diet one should take to avoid serious infection with COVID-19 that can often lead to death for those with chronic health issues. Another proposal is raising the body temperature of the infected to above 25°C to dismantle the virus. This is based on the fact that Coronavirus is not a living organism but a solid-fat-like material with many protein cores imbedded in it, which easily melts and decays at 25°C. These measures are made possible by examining physicochemical nature of Coronavirus and its replication process. That is, Coronavirus can only replicate through forming “Cofat” structures by freezing (RNA core replicating and “coplating”) and also easily decays by melting at its melting/freezing point. The growth mechanism of Coronavirus presented in this paper explains why a number of clinical phenomena that have not been explained so far happen that way. For instance, it explains why people catch cold more often in cold winter than in hot summer. The proposed solution should work for the current type of Conoravirus as well as for all its mutated versions as their chemical composition is all the same.

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1. Introduction

The death toll from COVID-19 exceeded 150,000 as of April 18, 2020. Being afraid of infection people are staying at home and very reluctant to meet with others outside of their homes. Offices are being closed and factories are shutting down. Going back to pre-COVID-19 life seems almost impossible unless vaccines or treatment drugs are found.

COVID-19 virus could be a distant descendent of cold virus, mutated countless times from it that also belongs to Coronavirus. Influenza virus is the same. Cold, Influenza, and COVID-19 virus, all belong to the family of Coronavirus. It has characteristics of a living organism as well as properties of a material; replication of RNA(Ribo Nucleic Acid) is what a living organism does and decay when its fat outer cover is melted by heating is similar to how a material behaves.

In this paper an attempt is made to present ways to stop COVID-19 by examining physicochemical nature of this virus and its replication process. Specifically, this paper examines (1) the composition of Coronavirus, (2) its mechanism of replicating and increasing its mass, and (3) clinical observations of this virus infection, and proposes ways of stopping this pandemic. Also, material-like

properties the virus displays during its replication process is further explored to give readers some insight into what would actually happen when the virus grows in our body.

2. Physicochemical Nature of Coronavirus

(1) Composition of Coronavirus

Coronavirus is composed of RNA core¹⁾, which is protein in nature and the outer cover²⁾, which is essentially fat. It is not entirely a living organism, but rather protein molecules covered by a protective layer of lipid(fat). The virus is very fragile; the only thing that protects it is its thin outer covering. Irene Ken(1), a physician said, “The virus is not killed but decays on its own.” It needs a host (the infected) that can provide necessary nutrients, namely, protein and fat to survive, grow and replicate. If the virus gets enough of them, it replicates making many copies of itself inside the host that will make him or her show symptoms of its infection.

(2) Composition of Outer Layer

Irene Ken(1) stated that the outer protective cover of the virus is made of fat. Since its exact composition is not known, we will call it “Cofat”, coined from Coronavirus and fat. Additional research would be needed to clarify physicochemical nature of Cofat such as

1) More precisely, the core of Coronavirus is called Nucleocapsid, which is composed of Ribo Nucleic Acid(RNA) and a protein cover called Capsid.

2) The outer skin layer of Coronavirus is lipid membrane covering the Nucleocapsid core.

composition, melting point, volume change at solidification, heat conductivity, gas permeability, etc. Cofat could be regarded as a new material, which will be discussed later in detail. Irene Ken(1) also said, “Heat melts fat; this is why it is so good to use water above 77°F(25°C) for washing hands, clothes and everything,” implying that the virus is dismantled or melts away above 25°C. Since the melting point of animal fat, which is mostly saturated fat, is around 46°C³⁾, and thus it is solid below it, whereas unsaturated fat like DHA or Omega3 is liquid at room temperature, it must be the saturated fat that plays a significant role in solidifying the outer skin layer of the virus. This is more clearly illustrated in Diagram 1, which shows the effect of temperature on phase changes of saturated, unsaturated, and Cofat and on the processes involved in virus replication. It should be noted that this phase change, from liquid to solid and from solid to liquid, is an absolute requirement in the replication of the virus. Note also that the melting point of Cofat could vary to some extent depending upon the type of fat the virus feeds on.

(3) Saturated vs Unsaturated Fat

Human and mammals need unsaturated fat in order to subsist but cannot synthesize it by themselves. Therefore, they must take it from food as needed through everyday meals. On the other hand, saturated fat can be synthesized when they take in carbohydrate or protein in excess of what is needed by the body. All carbohydrate

3) According to Korean Food Standard Codex, the melting points of fat from livestock are: 45~50°C for cattle, 43~48°C for pig, 43~55°C for sheep, and 45~54°C for horse.

taken in is converted to glucose and so is excess protein. This glucose is then consumed for moving, maintaining body temperature, etc. and then what is left over is converted to saturated fat and stored as body fat, which will be available for use when there is unexpected shortage of food in the future. This means we do not have to take in additional saturated fat from outside. When we do by eating red meat, it is going to help feed the virus so it will grow and replicate. Unfortunately, we tend to take in saturated fat in excess even though we do not need it. Note that the saturated fat stored in the form of body fat would not be readily available to the virus.

(4) What the Virus Does with Fat One Takes In

(a) Transport Mechanism of Fat In the Body

In order for the body to transport fat that does not dissolve in water(blood), it employs LDL(Low Density Lipoprotein) and HDL(High Density Lipoprotein) as carriers. LDL and HDL make possible the blood vessel transport nutrients like fat, cholesterol, etc., which do not dissolve in water(blood). LDL and HDL also make possible the blood-vessel transport saturated fat, which is solid at 36.5°C, the body(blood) temperature as the melting point of saturated fat is about 46°C (see Footnote 3). In fact, LDL and HDL are transporters of fat in blood. We may consider LDL as liquid fat in blood for convenience.

When the nutrients like fat, cholesterol, etc. in LDL in blood are

given away to the cells for consumption, LDL becomes HDL by losing low-density materials like fat and cholesterol and thereby the density of fat transporters goes up. If the low-density nutrients like fat, cholesterol, etc. cannot be used by the cells, LDL content in blood goes up. Such situation will likely occur when people eat too much meat and greasy food full of fat.

(b) Consequences of Feeding the Virus with Fat

It is expected that people with high LDL content in their blood, compared to those with low content, will be infected with cold or COVID-19 more often since the virus has better chances of getting the fat necessary for replication. From the statistics on COVID-19 we know that those with high LDL content tend to get seriously ill that can often lead to death, as explained in ⑥ of Section 4. The reasoning behind why such a phenomenon happens will be provided in detail later.

(c) By Coronavirus Saturated Fat One Takes In Is Converted to Solid Fat Which Amasses at the Walls of One's Alveola, the Volume of Which Expands 100 Times.

Simply we can say that what Coronavirus does with liquid fat when fed with LDL is creating solid fat out of liquid. In this process the virus makes lots of solid fat at the walls of alveola, which is by the way named Cofat in this paper, whose volume will possibly be more than 100 times the liquid counterpart. Cofat is actually the virus

itself. The concept of Coronavirus creating this massive solid Cofat out of the liquid is the key point of this paper.

3. Mechanism of the Growth of Coronavirus

In order for Coronavirus to grow, as all living organisms do, it has to replicate. In addition, it increases its mass by “coplating” (this will be defined later in Section 3.2) that has material-like property.

Mechanism of the growth of Coronavirus presented here explains why the clinical observations described in Section 4 happen that way. Scholars in the field of medical science, evolutionary biology, or in other related fields have so far failed to explain these phenomena.

3.1 The Growth Process of Coronavirus

As Coronavirus is composed of protein RNA and Cofat outer cover, it can replicate when it gets the nutrients, i.e., protein and fat. The replication starts when the virus feeds on liquid nutrients and ends when it forms a solid Cofat outer cover. This process completes at or around the solidification point of Cofat when the phase change from liquid to solid takes place. To complete replication the virus should form a solid outer cover, which can only be achieved through Cofat, the building material of the outer cover, transitioning from liquid to solid state. This process involves the following three steps:

(1) synthesizing liquid Cofat at 25°C or above from liquid saturated fat in the form of LDL and other ingredients from blood,

- (2) molding (forming) liquid Cofat at 25°C or above to shape its outer cover, and
- (3) cooling/solidifying the just molded but still soft Cofat outer cover at 25°C or below.

Note that 25°C is the liquid-solid transition point of Cofat and that the environment should change accordingly to accommodate this phase transition of Cofat to complete the replication. Processes for feeding on the nutrients, synthesizing Cofat, and molding soft outer cover should occur on a temperature at or above the melting point of Cofat where they all are in liquid state, but processes for cooling and hardening the molded outer cover should take place at or below the solidification temperature of Cofat (see Diagram 1). It is also noted that molding Coronavirus outer cover at a cool environment would not be possible unless the solid Cofat is melted again by heating. It is just like molding a fry pan from solid aluminium through melting by heating.

When Coronavirus grows, the above three-step process actually takes place simultaneously at 25 C, as will be explained in the next section.

3.2 The Temperature at Which Coronavirus Grows and Its Mechanism

The melting/freezing point of Cofat is the temperature at which Coronavirus grows. At temperatures above the melting point of Cofat, the virus decays; at temperatures below its

Coronavirus-shaped outer cover cannot be molded out of Cofat. From the fact that Coronavirus grows at the melting/freezing point of Cofat, it must be concluded that it grows only by “coplating”(defined below) its replicates(new members) at the freezing point (same as the melting point) of Cofat to form a layer of solid Coronavirus.

“Coplate” is a verb coined from Coronavirus and plate. ‘To coplate’ means to attach a “Cofat structure” or a mass of Coronavirus on a surface of solid “Cofat structures.” “Cofat structure” and “Cofat structures” used above to define “coplate” are defined as: “Cofat structure” is individual Coronavirus covered with the hard Cofat outer cover, which is actually Coronavirus itself, and “Cofat structures” is a layer or a mass of Cofat structure.

Simply put, Coronavirus grows only by coplating Cofat structures at its melting point to form the frozen structure at a temperatures below its freezing point.

Coronavirus increasing its mass by coplating is similar to a thin layer of ice being formed at the surface when a lump of ice, which is at below 0°C, is put into water, which is at 0°C. Or, one may think of ice or frost forming at the inside of a door when the temperature of the outside is below 0°C.

One more thing that should be added here for the coplating of Coronavirus is, when the virus coplates a coating of Cofat structure

onto the already frozen structures, RNA cores are put in-between the new coatings of Cofat structures while they are freezing. What a magic Coronavirus is doing.

In summary, Coronavirus is a solid-fat-like material covered by Cofat with RNA cores inside. It creates solid-fat-like Cofat structures by growth(replication and Coplating), which is a mass of Coronavirus.

The virus grows at the freezing point of Cofat by coplating, i.e., by attaching Cofat structures (Coronaviruses) onto the surface of the same structures already formed and remains solid at temperatures below the freezing point of Cofat. And it melts away or decays when heated above the melting point of Cofat. In this way, a mass of Coronavirus or Cofat structures has the property of a material, a fat like material.

This is the reason why we believe Cofat is a new material. In reality, it could be meaningless to differentiate between Coronavirus, Cofat, a Cofat structure, and Cofat structures because Cofat exists only as an outer cover of a Cofat structure or an outer covers of Cofat structures and also because one member of Cofat structures cannot exist by itself but only as a part of a mass of Cofat structures. As such, it seems natural for us to call Cofat structures as Cofat just as we call a mass of Coronavirus as Coronavirus. In fact, a Cofat layer. a Coronavirus-structures layer, and a Coronavirus layer should mean the same; Cofat is Coronavirus itself.

This natural phenomena happening when Coronavirus grows, as described above, will become clearer when we discuss how Coronavirus grows at the inner most side of the cell membrane of alveolus cells, as described in the next section.

3.3 The Way Coronavirus Grows Is Dictated by the Transport of Heat and Materials

- (1) The way the Cofat layer or the virus grows at the cell membrane of alveolus cells is determined, and its thickness is limited, by the temperature at the inside of alveolus cell.

At the inner surface of the walls of alveolus cell, the virus grows at the freezing point of Cofat until the cooling by the outside air is balanced by the heating from the inside. The way Coronavirus grows should be all the same in any place as explained in Section 3.2, but the formation of Cofat layer at the inner most side of the cell membrane of alveolus cells is a matter of a special interest because alveola is the best place for the growth of Coronavirus in the body as will be explained in ① of Section 4.

The environment for Coronavirus growing at the inner side of the cell membrane of alveolus cell is shown in Diagram 2. The virus grows at the melting point of Cofat at the inner side of the layer of Cofat structures adjacent to warm cytoplasm of alveolus cell. As the layer of Cofat structures at the wall(cell membrane) of a alveolus cell gets thicker as Conoravirus continues to grow, the virus at the inner

most side of the cell membrane will have difficulty getting enough cooling from cold air since the thick layer of Cofat structure blocks the air passage, and thus its Cofat outer cover will be on the verge of melting away by the heat from the body or blood. At this stage the growth of the virus will stop. Therefore, the temperature of Coronavirus or Cofat structures at the inner most side of the cell membrane of alveolus cells should always be maintained at the melting/freezing point of Cofat for the virus to grow.

Coronavirus grows at the melting/freezing point of Cofat at the inner most side of the cell membrane of alveolus cells as long as the virus gets enough cooling from the cold air that can pass through the Cofat layer in the inside of the alveolus. On the other hand, the temperature at the outer most side of the cell membrane of alveolus cells or at the inner surface of the alveolus should remain below the melting point of Cofat for the virus to keep its shape without dissolving by itself.

(2) Alveolus cells will not be completely deprived of access to cold air or oxygen with the growth of the virus as no air to the cells means no cooling to the virus.

At the inner surface of the walls of alveolus cell, when the growth of the virus is at a stalemate as heat from inside is balanced by cooling from outside, alveolus cells still have access to a certain amount of oxygen or cold air and will not be killed by the Cofat layer. Otherwise, the virus melts and decays by the heat. What

Coronavirus is doing by growing at the inner side of the cell membrane of alveolus cells is making the cell membrane less permeable to oxygen and at the same time making the alveolus cell difficult to function as a respiratory organ by installing a layer of Cofat structures at the inner side of cell membrane of the alveolus cells. That is, Coronavirus makes the infected difficult to breathe. As the supply of (cold) air for cooling is not completely blocked by the layer of Cofat structure or by the growth of Coronavirus, the supply of oxygen coming in with the air to the alveolus cell that is required for the survival of the cell itself will not be completely blocked by Coronavirus. This explains why growth of the virus stops before the host dies, i.e., before the host stops supplying to the virus oxygen or air, which is necessary for its own survival as well.

Cooling by cold air the virus needs goes together with the supply of oxygen from air the alveolus cells needs, both of which are achieved by diffusion of air. At the inner surface(lung side) of the alveolus cells, diffusion is the only transport mechanism of gases. Transport of gases by momentum flow is not a mechanism working at that micro level. Heat is also transmitted only by diffusion of gases at this level. As such, when the virus at the inner most side of the cell membrane cannot get cooling from the air in the inside of the alveolus cell, the alveolus cells also cannot get oxygen that comes with air and when the alveolus cells cannot get oxygen from the air as the wall of alveolus cells blocked by layer of the Cofat structures, the virus also will not be able to get cooling from cold air.

3.4 How Growth of Coronavirus in Alveolus Cells Ends Up Destroying Them, Leading to Pneumonia

As Coronavirus makes thin Coronavirus-shaped solid outer cover from liquid fat as it grows by replication, it expands through the phase change from liquid to solid. If Cofat has properties similar to those of liquid fat when it solidifies, the volume of Cofat structures will be much larger than that of the liquid fat Cofat is made of. Coronavirus may convert one unit volume of liquid fat to several-ten unit volume of solid Cofat structures as shown in Diagram 3.

Coronavirus is making a lot of fat-like material, Cofat, with the fat the infected takes in. We can say that Coronavirus constructs, from saturated fat the infected eats, Cofat structures, the volume of which could be several-ten times the volume of liquid fat the infected takes in. This is the reason why alveolus cells will not be able to function as a respiratory organ.

It is awful imagining what Coronavirus is doing to the alveola cells when it constructs Cofat structure at the cell wall. It is also horrible thinking about the space occupied by this structure is expanding rapidly, with all the needles protruding from the spherical-shaped core. It is estimated that the liquid fat could expand more than 100 times by the creation of Coronavirus-shaped structure when the replication takes place. Simply speaking, the infected is killing his or her own alveola cells with the fat he/she consumed by letting the

virus builds this structure in his or her alveola cells. But do not worry too much. The virus will not kill the alveola cells in most cases, as was explained in Section 3.3 and will be verified in ② of Section 4.

3.5 Summary of the Growth Mechanism of Coronavirus

Coronavirus is generating solid Cofat, a solid-like material which melts/freezes at around 25°C, from saturated fat that melts at around 46°C and was taken in from outside but exists in the form of LDL or HDL in the blood. The solid Cofat generated by the virus is a mass of the virus itself growing by the replication of the RNA core and coplating (attaching Cofat structures at its freezing point to its already-formed solid structures at a temperature below its melting point). As the virus amasses a large amount of solid Cofat structures generated by its growth, i.e., as it grows mostly at the inner surface of the cell membrane of alveolus cells of the host, and the fat-like material(the virus itself) generated blocks the cell membrane, the virus makes the host have difficulty breathing as the infection progresses.

But the virus does not grow up to the point of killing the infected. The growth of the virus or Cofat structures continues at its growing place at 25 C, the melting point of Cofat, until the heat coming from the inside of the body is balanced by the cooling provided by cold air coming in from the ambient. Under this state the virus, which needs both nutrients and cold air and at the same time needs to

maintain the thickness of its Cofat structures that was balanced by the heat from the inside and the cooling from the outside air, allows to some extent penetration of gases through alveola walls and Coronavirus layer, letting the alveolus cells of the infected manage to function as a respiratory organ and survive, and thus the infected would not die.

4. Clinical Observations Supporting Our Views

Growth mechanism of Coronavirus presented in Section 3 is supported by the following eight clinical observations:

- ① The best place, in the body, for the growth of the virus is alveola where warm blood meets with cold air.

The place for growth of Coronavirus should meet two conditions:

(a) where warm, liquid saturated fat to synthesize Cofat and amino acid to duplicate RNA core are available from 36.5°C blood (raw material availability), and (b) where cold air below 25°C is available for cooling and solidifying Cofat outer cover (cold air availability).

Now the question is, where in our body does such an environment exist? Specifically, a place warm enough so liquid protein for the RNA core and liquid saturated fat for Cofat are available for the virus to grow and replicate and also cool enough, say below 25 C, for the Cofat outer cover to solidify at the same time. This is best met at the walls of alveolus in the lung, specifically, at alveolus cell membrane where the inside and the outside of the lung divide. This

also is where oxygen is taken from the outside air and then given to the red cell inside and carbon dioxide is released to the outside. The virus can thrive on the walls of alveola, a meeting place for warm blood for the virus to grow and replicate and cool air for its outer cover to harden. It is well-known that the replication of Coronavirus is most active at the alveola, often causing pneumonia to the infected.

We can say that Coronavirus is opening a virus manufacturing plant at the walls of alveolus cells making soft outer cover by getting supplies of saturated fat and other materials from warm blood and then cooling the soft outer cover to harden with cold air coming in from the ambient. To Coronavirus, blood vessels are pipelines for the nutrients like saturated fat and the inside of the alveola is a cooling chamber.

The table 1 compares alveola, nostrils/bronchi and other body parts on how favorable they are for the virus replication. As seen from the table 1 the best place for the virus replication is at the alveola where the two nutrients (protein and saturated fat) are readily available in liquid form for the virus to feed on and where cool air is also available for the Cofat outer cover to solidify. At nostrils and bronchi, the temperature could be below 25°C, but in that low temperature, Cofat will remain solid and molding the outer cover would not be possible; nor is liquid protein or fat available for the virus to feed on to grow and replicate. In other parts of the body, even if the virus can make a warm and soft Cofat outer cover from

saturated fat, it easily melts and thus the RNA molecule in the core disperses, resulting in break-down of the virus.

- ② The infected by CORONA-19 do not get seriously ill that can lead to death unless they have underlying chronic health issues prior to contracting CORONA-19.

As we know from the statistics on CORONA-19 in South Korea, it is very rare for young people to die when contracted by the virus and most deaths came from those who had chronic health problems before they catch Corona-19. The growth mechanism of this virus proposed in Section 3 explains why Coronavirus stops growing before the host dies.

- ③ People catch cold and influenza more often in cold weather. That is because, as explained in the Coronavirus replication process, the temperature change from warm to cool in the alveola can only occur in cold weather, not in warm weather. In summer the virus replication process cannot be consummated because the temperature inside the alveola is often above the freezing point of the Cofat outer cover, which is estimated at 25°C, and thus the Cofat outer cover easily melts and the RNA molecule at the core disperses and breaks down on its own. Therefore, virus replication is easier in winter than in summer. As a consequence, people catch cold more often in winter than in summer. This also explains why the “cold” in catching cold is the same as the “cold” in cold weather, explaining how the former originated from

the latter.

- ④ When people get sick, people lose appetite and cut off additional supply of nutrients. They also tend to shun greasy food and take light meals like a thin gruel of rice. This phenomena seem like a response of human being not to supply saturated fat and protein to the virus, which could have been learned through evolutionary process.
- ⑤ When people get sick by catching cold or COVID-19, their body temperature tends to go up since at higher temperatures the virus will have hard time making the Cofat outer cover, another example of a lesson learned through the evolutionary process.
- ⑥ Severe cases leading to death due to COVID-19 is easily found when the hosts or the infected take in saturated fat and protein in excess of what the body needs. From the statistics on COVID-19, it is known that those who have underlying health issues like high blood pressure, diabetes or high LDL content tend to get seriously ill that can lead to death. Those health problems are known to be mainly caused by eating too much greasy food. Western people who normally consume red meat as a staple and thus take in a lot more protein and saturated fat than the body needs, show more serious cases of COVID-19 infections than the Asian people whose daily staples are mostly vegetables.
- ⑦ The herbivorous animals are not known to become hosts to

Coronavirus. On the other hands, carnivorous or omnivorous animals such as homo sapiens, swine, birds, bats and pangolins become hosts to the virus. This fact confirms the role of animal fat playing in the replication of the virus. Saturated fat in the blood that is necessary for virus replication is not readily available in the herbivorous animals. Cold-blooded animals will also not host Coronavirus either because their body temperature is always the same as the ambient. The replication of the virus requires molding the outer cover that is made of liquid fat supplied from warm blood to an intended shape that requires cooling of the soft outer cover freshly molded so that it can be hardened.

- ⑧ Everyone knows light meals are good for the health and long life. Diet of Okinawa people who had the longest life expectancy in the world until 20 years ago is to consume food in the ratio of 10 carbohydrate and 1 protein, a little bit less than what is called for by the appetite. It is also been reported that those who regularly take light meals consisting of low fat, low protein, high carbohydrate and lots of vegetables rarely catch cold and when they do, their symptoms are rather light in most cases.

5. Solutions Proposed to Stop the Growth of the Virus

It is now proposed the following to stop the growth/replication of Coronavirus:

- (1) Cutting off Supply of Saturated Fat and Protein to the Virus

As explained earlier Coronavirus is made of saturated fat and

protein and thus it needs them to survive, grow and replicate. Limiting this supply can be achieved by eating less red meat and greasy food full of fat. Therefore, people infected with this virus are recommended not to eat red meat and greasy food and instead should feed on carbohydrate such as bread, boiled rice, potato, banana, etc.

(2) Raising the Temperature of the Place Where Coronavirus Lies

Another solution is heating the place where Coronavirus lies. By heating the place where the virus stays to above the melting point of its Cofat outer cover, it will melt, disintegrate and decay. Air conditioning in the hospital wards for the infected must be turned off and should be heated to the temperatures above the melting point of Cofat. For example, the infected could be put in the sauna which normally operates at temperatures in the range of 50 ~ 85°C, where the virus should be melting away.

One may do intensive exercises more than twice a week. That may melt away Cofat-structure layer formed at the cell membranes of one's alveola cells by raising their temperature.

6. Conclusions

It is concluded that cutting off the supply of saturated fat and excess protein to the body or raising the body temperature to above the melting point of the Cofat outer cover are the ways for us to employ to fend off Coronavirus.

The proposed solution should work for the current type of Coronavirus as well as all its mutated versions as their chemical composition is all the same. Therefore, this proposal should be a lot better than any vaccines being developed because the proposed solution will work for any types of Coronavirus including those that will pop out in the future by all sorts of mutations.

Other advantages of the proposed solution can be, (1) It does not cost any; it can save money for the world, (2) It can be implemented immediately anywhere in the world, and (3) This proposal will improve overall health of the general public who has diabetes, high blood pressure and high cholesterol so the worldwide health cost will be significantly reduced.

7. Final Comments

The growth mechanism of Coronavirus proposed in this paper, supposing Cofat structures or Coronavirus as solid-fat-like material but with a different melting point, explains why 8 clinical phenomena listed in Section 4 happen that way. Still, the following questions should be answered by further research: How does Cofat structures or Coronavirus, which seems to behave like solid fat, migrate to secretion in lung which becomes respiratory droplets and then infect others? Does it dissolve in the secretion of lung at a temperature below the freezing point of Cofat? If it does not dissolve in water(blood, secretion), then, are there any carriers in the secretion, like LDL in blood, that help it move to the secretion?

Migration of the virus grown in the infected alveolus cell to the lung secretion could occur when the cell dies and the cell membrane breaks down. Then, the supposition that Coronavirus does not dissolve in water(lung secretion) explains even why the infected does not infect others in its early stages.

8. Acknowledgements.

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9. References

- (1) A 2-page writing by Irene Ken, a physician, about the method of destroying COVID-19 virus, which Heechung Lee sent to me by kakaotalk.

Diagram 1

Phase Change with Temperature for Various Fats

and

Processes Needed for Virus Replication

Temp.	Sat. fat	Unsat. fat	Cofat	Processes
45°C	Liquid -----			Feed on sat. fat.
	Solid	Liquid		Synthesize Cofat
			Liquid	Mold outer cover
25°C			-----	
				Cool outer cover
			Solid	Harden outer cover
0°C		Liquid		

Diagram 2

**Environments for Coronavirus growing at the inner surface
of cell membrane of alveolus cell**

Temperatures

※ Explanations for the above diagram are provided in the next page.

Explanations for Diagram 2

1. Diagram 2 is made under the supposition that the melting point of Cofat is 25°C.

The temperature at A(the inner surface of the layer of Cofat structures) is 25°C and the temperature at B(the outer surface of the layer of Cofat structures or the inner surface of cell membrane) is below 25°C

2. At A, Cofat structure or Coronavirus freezes(RNA core replicating and coplating) or melts(decaying) depending upon the temperature at D(inside of the alveolus).

Coronavirus Coplating is a special way of freezing, which puts RNA cores in the middle of Cofat structures being formed, increases the mass of Coronavirus or Cofat structures, which is the result of the growth of the virus.

3. The layer of Cofat structures gets thinner as the temperature of air at D goes up, and disappears when the temperature at D goes above 25°C.
4. The temperatures at C(the outer surface of cell membrane facing the air) of the infected will be lower than that of the healthy persons because of the layer of Cofat structures (Coronavirus) being formed. For the infected, alveolus cell membrane also gets less permeable to gases by the same reason.

Diagram 3

Coronavirus Coplating

one unit volume
of liquid fat $\Rightarrow \Rightarrow \Rightarrow \Rightarrow \Rightarrow$ several-ten unit volume of solid
Cofat structures or mass of
Coronavirus created from
one unit volume of liquid fat

Cofat structures or Coronavirus itself is solid-fat-like material, which freezes (RNA core duplicating and coplating) and melts(decays) at the melting/freezing point of Cofat, which makes the outer cover of Coronavirus.

Coronavirus Coplating is a special way of freezing to put protein RNA cores in the middle of Cofat structures being formed. It increases the mass of Coronavirus or Cofat structures, which is the result of the growth of the virus.

Table 1 Comparison of Suitability of Different Places
for Coronavirus Growth

Location	Availability of Nutrients	Availability of Cool Air to Harden Cofat Outer Cover	Suitability for Replication
Alveola	liquid protein and saturated fat are available.	availability dependent upon ambient temperature	good
Nostrils/ Bronchi	liquid protein and saturated fat are NOT available.	availability dependent upon ambient temperature	bad
Other Parts of the Body	liquid protein and saturated fat are available.	not available	poor