

Biophysics View Point of KP.3 Including other Virus and Treatment with Water

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Abstract

We tried to connection of the basic biophysical sense of virus science, in which we discuss the amount of element and chemical bond energy every element in every amino acid relating to a virus. I found some relationship with a virus' strength, infectious, remedy, etc. We indicate the wide viewpoint meaning virus spread. Furthermore, we introduce the latch circuit for virus-forming variant and associate with the extended--pico-particle water since I research and developed for more than ten years.

Keyword: KP.3 virus; mutant; spike protein; amino acids; extended--pico-particle water

Abbreviations

SIGN water, KP.3, H-NMR, DV-X α , SARS-Cov-2, MERS.

Introduction

The origins of viruses in the long history of life are still unclear. A virus is a micro size that replicates only inside the living cells of an organism [1], and it is still question whether a virus is alive or not. So, viruses infect animals and plants including bacteria.

On the other hand, a vaccine has been employed to protect against infectious diseases by antibodies against the virus, bacteria, fungi, etc. Human experienced the new type virus as α -mutant (September, 2020), β (May, 2020), γ (November, 2020), and δ (October, 2020) as we discussed previously [2, 3]. The big causes may be movement of people, and the infection are not only in air, and there are a lot of reasons in daily life and basic style in the world. On the other hand, medical society research vaccine to cure and/or remedy. These are symptomatic therapy. We need an essential treatment for vaccine development and remedy of the diseases.

Here we study virus with viewpoint of biophysics. It means that basic sciences of chemical compound which amino acid level in virus rather than DNA and RNA, and it is still larger in a gene level. However, we shall discuss a total system of the human body, when we relate to water which constitutes 70 % in bodyweight and is said to be 80 % in blood as well known. Therefore, we introduce the chemical bonds in amino acid and its strength, then the special-processed water gets involved against a virus [4]. The special-processed water is manufactured under high pressure more than 100 megapascal. So that we estimate not water cluster even a H₂O molecule, which is neither hydrogen atom but hydronium or hydroxyl ion.

We name it infoton, namely an extended-pico-particle, depicted $\langle H^+ \sim e^- \rangle$, like an extended elementary particle in physics [5]. Here, we introduce mechanism of the specially-processed water (infoton) may work for prevent from a virus making another protein from a spike protein.

Methods

We cited how to make the extended-pico-particle water; call it SIGN water (Spin Information Gauge Network) many times in previous reports. The SIGN water is stable for seven years at least according to our H-NMR analysis (hydrogen-nuclear magnetic resonance) [6]. The originality of SIGN started the computer simulation of two water molecules after the hydrogen-bond-dissociation using DV-X α (the discrete variational DV-X α potential) [6], in which is the birth of infoton. However, we cannot perform virus experiments, so we have a piece of evidence by some people drinking the SIGN water, although we discuss the theoretical point of view.

Results and Discussion

Previous mutants

We overview virus mutants since the 21st century. There is severe acute respiratory syndrome (SARS-Cov-2 ; COVID-19) in 2002, and middle east respiratory syndrome (MERS) in 2012. We focus on the recent virus relating to COVID (KP.3) from view point of theoretical approach to analysis virus characteristics; i) we can easily compare the difference of the elements in the amino acids involving a spike protein, and the generated protein by virus based as far as known present. ii) bond strength of every element in each amino acid; C-N, C-C, N-H, C-O, C-H, O-H, C=C, C-N and C=O, in which C-N is the weakest and C=O is the strengths corresponding a covalent bond energy; ① C-N (3.1eV), ② C-C (3.5 eV), ③ C-O (3.7 eV), ④ N-H (3.9 eV), ⑤ C-H (4.3 eV), ⑥ O-H (4.6 eV), ⑦ C=C (6.3 eV), ⑧ C=N (6.4 eV), ⑨ C=O (8.3 eV) [7].

The α -mutant (September, 2020) relates to the spike protein N501Y; N is asparagine --C₄H₈N₂O₃, Y is tyrosine --- C₉H₁₁NO₃. The tyrosine is formed from the asparagine in the spike protein by the virus. Then, here we discuss two points so that we can analyze the following two points shown in Figure 1.

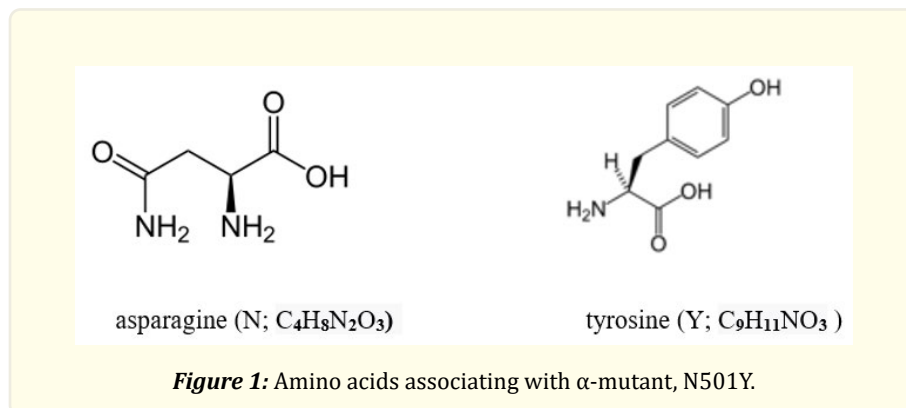
We may estimate virus characteristics like infectiousness, its strongness or weakness, and how we can treat a virus. We discuss these themes from the stand points, i) and ii) for α -mutant and δ mutant. KP3 is elucidated in the next section.

First, we introduce α -mutant described above, which is N501Y, i), we analyzed the element changes increasing amount, C; 4 to 9, H; 8 to 11, but N decreases 2 to 1, and no changes in O (3), when the virus generates tyrosine from asparagine. We can estimate the weak contagious because the oxygen is no-change and nitrogen decreases meaning the α -mutant does not seem to go through lung.

From the stand point, ii), C-H increasing the amount, the strength is not so high because the bonding C-H is 4.3 eV pasted in yellow color. Furthermore, the virus employes asparagine to form benzene ring using a double bond, C=C (6.3 eV) needed larger energy.

The α -mutant does not possess high infection in this chemical bonding, too.

	C-N	C-C	N-H	C-O	C-H	O-H	C=C	C=N	C=O
N	2	3	4	1	3	1	0	0	2
Y	1	6	2	2	7	2	3	0	1

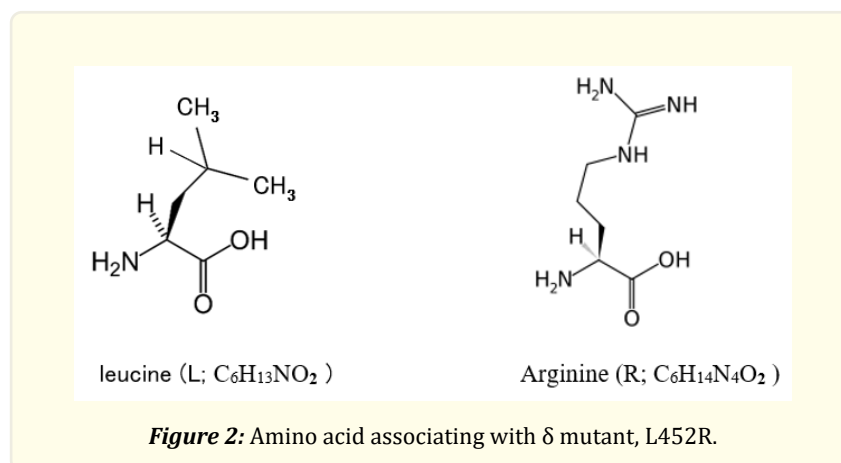


Other variants existed before α -mutant like BA.1 through BA.5 [8, 9]. But we skip them as well β and γ . We already discussed BA.1 through BA.5 from the viewpoints of biophysics [10]. We continue δ mutant as follows.

Figure 2 shows the amino acid associating with δ mutant, L452R. We look at δ mutant (October, 2020) relating to L452R; the amino acid in spike protein is leucine -- $C_6H_{13}NO_2$, and amino acid the virus forms is arginine -- $C_6H_{14}N_4O_2$; the element amount changes, C; no change, H; 1, N; 3, and O: no change. Therefore, the virus wants to generate the amino acid with comparatively weak energy of 3.9 eV (N-H). Every larger energy more than O-H is no difference in the amount between leucine and arginine, namely the virus can easily form the amino acid, arginine from the spike protein. Therefore, we regard the δ mutant is stronger than α -mutant.

The mutant is said to be stronger infectious power than α -mutant (WHO & Japan) [11].

	C-N	C-C	N-H	C-O	C-H	O-H	C=C	C=N	C=O
L	1	5	2	1	10	1	0	0	1
R	4	4	6	1	7	1	0	1	1



Recent KP3 mutant

Before we move on to new mutants, KP3, in May one of these new variants, named KP.2, took over as the most dominant strain of SARS-CoV-2 in America, according to the U.S. Centers for Disease Control and Prevention. However, since the beginning of June, a new variant, named KP.3, has taken the lead. If media reports are to be believed, COVID-19 has not completely gone away. It keeps on lurking around. Around 2020, there seem the confused situations of corona virus regarding the name of a virus like FLiRT, JN1, etc.

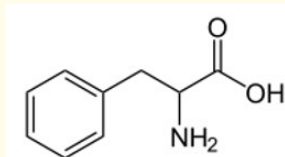
Now we concentrate on KP3 and KP2. The difference between them is that KP.3 has an additional mutation called F456L, which is another name of the KP.3. This mutation allows the virus to more easily latch on to our ACE2 (Angiotensin-converting enzyme) receptors—this is called binding affinity—making it more infectious. This is why KP.3 is now starting to dominate, but KP.2 also picked up.

Figure 3 shows amino acid associating with KP3 mutant, F456L.

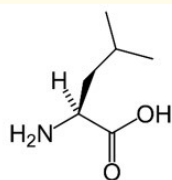
When we analyze the amount of an element difference in amino acid, the spike protein and the KP3 made-protein are following; spike --- phenylalanine $C_9H_{11}NO_2$; C 9, H 11, N 1, O 2 and KP3 made-protein ---- leucine $C_6H_{13}NO_2$; C 6, H 13, N 1, O 2. According to this comparison, C decreases 3, H increases 2, but N and O are no change. We may regard airborne infection, but it is not in dry air because the virus wants hydrogen, namely in wet atmosphere. What we surprise is phenylalanine is the spike protein and the leucine is the virus-forming one, both are an essential amino acid which we take from cow milk, meat, etc.

Now we check the bonding conditions; here is special property is C-H bond increases meaning the intermediate energy of 4.3 eV. There are almost no changes except for C=C and C-C due to no benzene ring. We evaluate overall KP, which virus avoids higher energy of a double bond (C=C), namely not so infectious, that is why medical people notice to KP2, but we do not know the detail which position of protein like 501, 456, 452, etc., and what spike protein is.

	C-N	C-C	N-H	C-O	C-H	O-H	C=C	C=N	C=O
F	1	6	2	1	8	1	3	0	1
L	1	5	2	1	10	1	0	0	1



Phenylalanine (F; $C_9H_{11}NO_2$)



Leucine (L; $C_6H_{13}NO_2$)

Figure 3: Amino acid associating with KP3 mutant, F456L.

How we live with virus variants

We are interested in amino acid which CORONA variants want. We have nine essential amino acids for human body, and phenylalanine, one of them relates in BA2, BA4, BA5 and KP3 among the spike protein or protein generated by virus. The next one is leucine; BA3, BA.4 and BA.5. The third one is lysine; two kinds of BA.4, which is T547K and N856K (K depicts lysine) described above.

	C-N	C-C	N-H	C-O	C-H	O-H	C=C	C=N	C=O
T	1	3	2	2	5	2	0	0	1
N	1	6	2	2	7	2	3	0	1
L	2	5	4	1	9	1	0	0	1

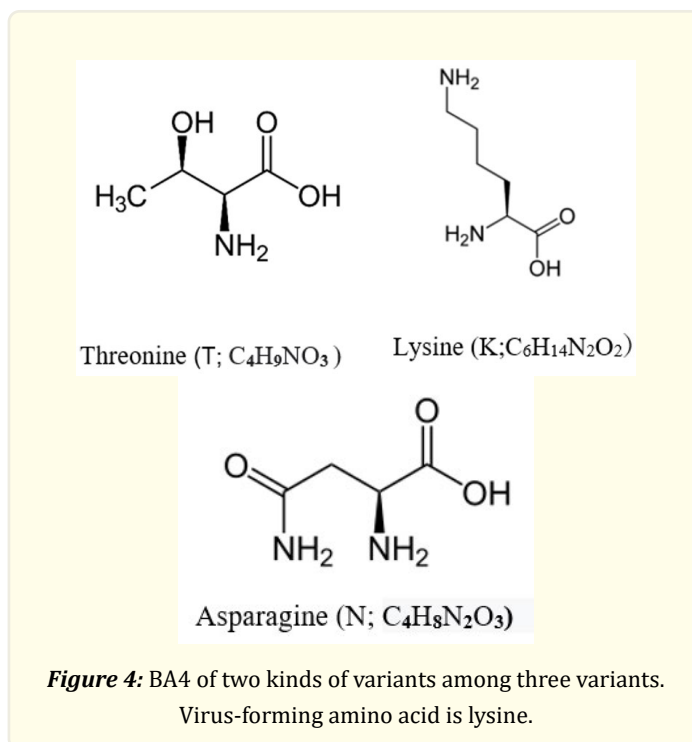


Figure 4 shows the spike proteins are threonine (T) and asparagine (N) depicting the virus-forming protein is same lysine (K). The former virus is named T547K and the latter is N856K which are classified into BA4. The lysine is the essential amino acid which is formed by the virus BA4. Furthermore, L981F belongs to BA4; namely, the BA4 is said to be a generator of essential amino acid. But, BA5 is L452R and F486V which are complex, L and F of the spike protein are essential amino acid as well V, although R is not.

That means six essential amino acids have not been involved in the virus so far in the 21st. Now we check what kind of amino acids relating to the virus in the case of BA1 named N501Y (asparagine and tyrosine). In N501Y, the covalent peptide bond is formed by binding two amino acids. The essential amino acid seems valuable connection with the virus like BA4. Is it just coincidence? Or there is certain meaning.

The following is a little bit different point, though; I impressed a virus havoc in 2020 through a half year of 2023 in the world. I found interesting news;

Will KP.2 dominate now? Talking to NBC News, Dr. Dan Barouch, Director of the Center for Virology and Vaccine Research at Beth Israel Deaconess Medical Center in Boston said, "It looks like those additional mutations make it more immune evasive, so it's not a surprise that it would then dominate". Meanwhile, researchers in Japan have said that the Covid vaccines currently recommended in the U.S. may be less effective against KP.2 [11].

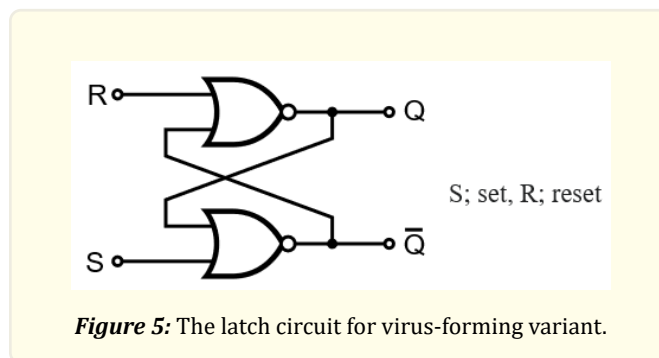
Live together with virus

Innovative idea should be necessary to deal with a virus which human being always meet since recorded history, because we can not extinct a virus. It is necessary to develop basic science to handle a virus and a prevalent illness with taking cold medicine and fever reducer.

An example is an electric latch circuit in which has one bit information, which is on the spike protein a virus attaches. A virus takes in logical value from spike protein, and possesses it as input.

Then, the input as "S" in the circuit and as lower as possible energy forming as "R" in the circuit shown in Figure 5, which is meaning an essential amino acid generation.

I introduce Figure 5 relating to drink the extended elementary particle water containing the depicted $\langle H^+ \sim e^- \rangle$, namely, infoton more than one litter a day.



S; illness or virus and R; drink the water. The water possesses characteristics to avoid the unnecessary matter to my body. So, virus attach the body, namely getting infected. This is one of step for getting immunity indeed. I tried what happen with a covid-19 vaccine four times for November in 2020 to March 2021, nothing happens like high temperature and some other symptoms. I concluded the virus affecting anything at all to my body. Since almost ten years ago, the infoton-water functions in nucleus four publishments (U.S.A. & U.K.) in 2013 through 2023, twenty eights' publishments for agriculture, medical, engineering fields [India] in 2021 through 2024. I cited three of them for instance [12-14].

Conclusion

We tried to connection of the basic biophysical sense of virus science, in which we discuss the amount of element and chemical bond energy every element in every amino acid relating to a virus. I found some relationship with a virus' strength, infectious, remedy, etc. We indicate the wide viewpoint meaning virus spread.

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