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Understanding Rapid Transmitting, Invasive, Corona Pandemics through (Aair), (IS::Tn::IS), Crispr/Cas-9 DNA Editing

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ABSTRACT

Antiadherent Immune Response (AAIR) against serotype 026: EPEC (Enteropathogenic (invasive) Escherichia coli) a fatal diarrhoea causing E.coli was successful in Balb/c mice experiment by the author. IS(Insertion Sequence) represented by IS1, IS2, IS3,-..IS10 flanking transposons (Tn) "IS::Tn::IS" and its illegitimate recombination was also studied curiously by the author to observe their spontaneous jumping, illegitimate recombination activities among DNA, chromosome and plasmids in Escherichia coli. Considering the fatality rate of corona as pandemic globally, the author has attempted to realise the possible application of AAIR, IS::Tn::IS and Crispr/Cas-9 in designing vaccine against corona, to prevent corona virus not to adhere in trachea and lung cells, to repair and to bring healthy life to mankind. is-Tn-is was observed/studied/discovered in Maize by Barbara Mc Clintock, USA, Peter Starlinger and Heinz Saedler, Germany studied the same in bacteria. Due to spontaneous mutations in corona, it is speculated by the author, that "IS::Tn::IS" DNA sequences might be present in corona, to mutate and to change the adhering, invasive and infective spike protein. The presence of IS-Tn-IS sequence have not been studied in SARS-COV-2, COVID-19, and corona. The sequence length, varied from IS1 (0.8kb) to IS10, (1.2 kb) (kilo base pairs) showed the potentiality spontaneous to do illegitimate recombination. If any of the sequence IS1, IS2, IS3…IS10 found common among HIV, MERS, SARS, Influenza, and H1N1 viruses, it could be useful to develop AAIR. Both AAIR vaccine concept and recent revolution in DNA editing, Crispr/cas-9(Clustered, Repeat Interspaced Short Palindromic Repeat), / (Crispr-associated protein-9) both could essentially be used, bidirectional in corona vaccine to protect pandemics and their repeats in future. The IR mechanisms which is proposed, that IS::Tn::IS cloned spike pathogenic DNA as involved in AAIR monoclonal antibody will block the adherence of corona spikes and Crispr/cas-9 will repair, the transmitted, invasive corona, in human body by programmable DNA of non-pathogenic influenza virus. The author describes few of those possible mechanisms of Is:: spike protein and Crispr based transposons to mobilize IR vaccine against corona, considering the nanostructures of corona and the use of it huge surface area in immune surveillance.

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Introduction

IS1 sequence IS found 8 copies in *Escherichia coli k-12*, varied in numbers among IS2, IS3, IS5……IS10. They are mainly existing as flanking gene in repeats and inverted repeats both sides of Tn (transposable elements), characterised by Ampicillin, Chloramphenicol, Kanamycin, and Tetracycline Figaro 1(a-e) [1, 4-16].

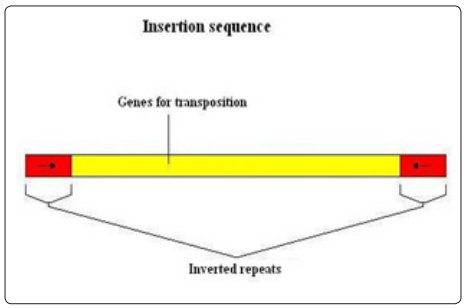

Figure 1a: Shows the Structure of One Tn, Flanked by Left and Right is Elements

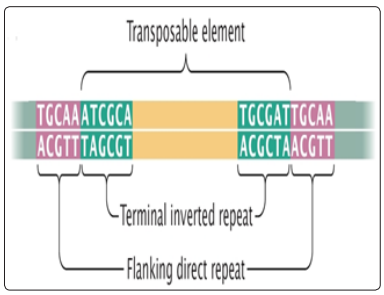

Figure 1b: Shows the Repeats and Inverted Repeats of is Elements.

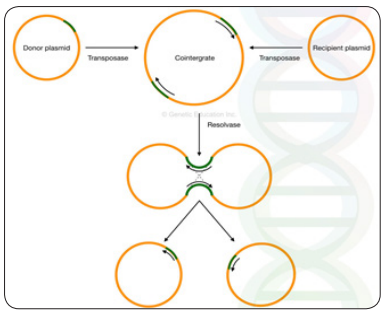

Figure 1c: Hybrid Recombination of DNA Sequence, the Multiplications of IS::Tn::IS, as Reproduced in Plasmid and Chromosomes

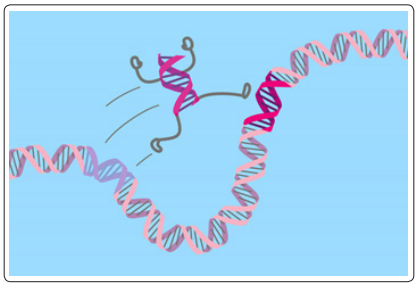

Figure 1d: Animated Concept of Jumping Gene of DNA Sequence

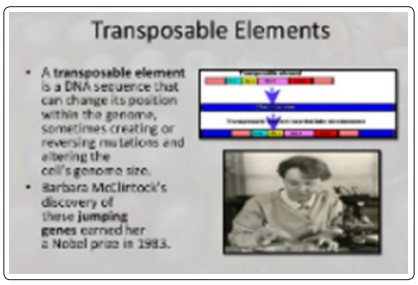

Figure 1e: Historical Discovery of Tn by Barbara Mc Clintock

IS based Tn (Transposons) are Jumping genes, involved in viral evolution, mutation, camouflaging infective nature of SARS COV-2 corona virus [8-16]. Jumping-genes as retro transposons hijacks special cells called nurse cells produce invasive nature of DNA driving evolution, and causing disease. Almost half of our DNA sequences are made up of jumping genes, known as transposons. They jump around the genome in developing sperm, egg cells and are important in cellular evolution and cause new mutations that lead to diseases [4-7]. Remarkably little is known about when and where their movements occur in developing reproductive cells. The key process that ensures their propagation in future generations, is the genetic disorders for the hosts. Animals have developed a powerful system to suppress jumping gene activity that uses small, non-coding RNAs called pi RNAs (Piwi-interacting RNA), the largest class of small non-coding RNA molecules expressed in animal cells. Through piwi-subfamily Argonaut proteins recognize jumping genes and suppress their activity. Occasionally jumping genes could mobilize virus infection, as propagated from Wuhan, China, to all over the world without any variations of RNA. Development of monoclonal antibodies against SARS-CoV-2, corona will improve disease management if used correctly. In late 2019, China reported a cluster of atypical pneumonia cases. The causative agent was identified as a new beta coronavirus, called severe acute respiratory syndrome. The virus rapidly spread globally to make corona pandemic. Sequencing and Is hybridization among severe respiratory disease causing viruses, classified by mutants and wild types, could have been widely useful to develop monoclonal antibodies vaccine against corona SARS-CoV-2 infections [15-19]. IS::Tn::IS is responsible for causing mutation, antibiotic resistance viral pathogens. Searching the presence of IS::Tn::IS through radioisotope labelled IS1, IS2 and IS3 DNA sequence, at 0.8kb to 1.2 kb, DNA sequence length could support the process quickly and accurately. Bacteria, Fungi, Mould and Algae and our body cell system belong to prokaryotic and eukaryotic cells and tissues systems, could support and find out the reason, why corona is difficult to remove and perhaps the reason, why corona comes back in human system after recovery. Prof. Barbara Mc Clintok of USA, discovered Tn in Maize seeds by their segregate color, changes and named Tn (Transposable element) Later Prof. P.Starlinger studied the same in Bacteria *E.coli*, Prof. H. Saedler as his follower continued the same. The integration and multiplications, jumping from one gene to other gene, from chromosome to plasmid, or plasmid to chromosome, is elements and their reciprocated, repeats and inverted repeats sequences, mobilize the mutational process. The searching of is element in corona, SERS, MERS, respiratory viruses could be used to develop vaccine. *DNA of E.coli k-12 C600* hybrid strains was used to study separately for animal tests. By isolating their Corona ss RNA, cloned into is element carried vector plasmids transformed into *E.coli k-12 C6oo Yale* strain and their isolated GE hybrid SA (Surface antigen) fimbriae (pili) could be used to observe the expression of AAIR in Balb/c mice, against corona The same concept could additionally be supported by Crispr/Cas-9, wherein the isolated ss RNA of non-pathogen influenza was programmed, cloned into Crispr/Cas-9 vector, expressed to repair corona, that already been escaped during treatment and AAIR vaccination, designed and cloned by IS::Tn::IS and spike protein. Bidirectional co-vaccine model, as proposed by the author, perhaps would be the ultimate model to mitigate corona pandemics, Fig.6. As per SEM and molecular biology studies, Fig.2, viral cells as prokaryon, carry ss, (single stranded), or ds (double stranded) RNA and DNA, coated by protein, phenotypically expressed at maximum size of nano and micron, use air-, dust-, water and insects as vector to spread.

Figure 2a: show the SEM (Scanning Electron Microscope) TEM (Transmission Electron microscope) View of Clustered Structure and Size of One Corona Virus

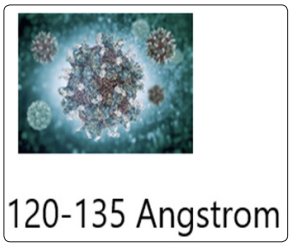

Figure 2b: Shows the Sem Structure and Size of one Dengue Virus

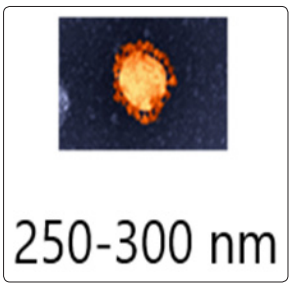

Figure 2c: Shows the SEM View Structure of one Spanish flue H1N1

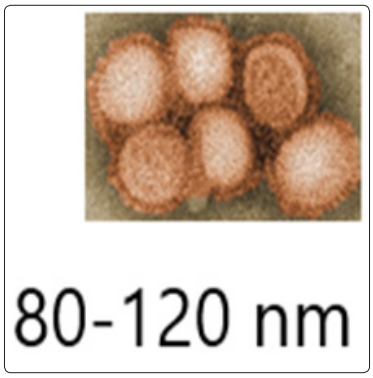

Figure 2d: Shows the Clustered Structure and Size of Influenza Virus

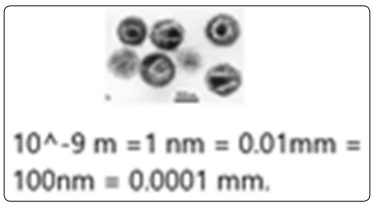

Figure 2e: Represents the Clustered, Size and Structure of HIV Virus. Whereas

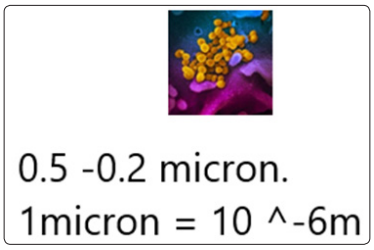

Figure 2f: Shows the Original SEM View of Wuhan Corona Viruses Appeared on Cell Surface

Their survivals depend on host. Based on host specificity, they can survive either as pathogen and or as non-pathogen and could get abolished in the long run. For survivals virus change mutational their DNA or RNA functions and to sustain in evolution. All such prokaryotic virus have partial and full parasitic nature, proved their enormous power to adapt environment. Similar to bacteriophages (Lambda, Psi-ex, T4), they maintain their existence in human, animal, birds and insect, as for host specific growth and transmission in the form of Adenoid-, Retro- and Rhinoviruses [5,6]. Virus cannot survive long, since they have no cell wall, only by protein and lipid coat/membrane, they remain dormant inactive without hosts. By epigenetic alteration, viruses manipulate single (ss) and double stranded (ds) DNA→RNA→into Protein coats, virus particles in the cells and propagate in host specific cells, Fig 6 (b). As per the 3rd laws of Darwin, "survivals of the fittest', the viruses aggressively search host for long and short term infections [7-10].Spanish flue, Influenza, MARS, SARS,HIV are those examples. IS1, IS2 and IS3, on the other, as DNA short sequence, are mainly involved for antibiotic resistance of prokaryotic cells, bacteria and viruses, including some aspects of corona MERS, SARS, HIV. Fig 2.

Methods of probe-DNA isolation have been discussed, [1-5, 7-10]. The respiratory viruses are mainly air, dust,-water, human and animal born. Spontaneous mutations have accomplished them to adapt and to search matrix/ vector as carrier (i.e. mosquito born Dengue) migrated from USA, Latino America and South East Asia. The most important part of these viruses is the coat (protein or lipid) and their epigenetics, RNA and DNA, their ss, ds, replication, transcription and translations. The mode of Infectivity and rapid transmissions are basically sustained by their adaptive mutations, and changing patterns of surface antigen, i.e. host specific spike (antigen) protein development, their propagations for long and short distances, either as droplets, encapsulated by saliva and /or as dry molecules in air, using dust particles as vector/ matrix/carrier. Viruses are clever, compared to bacteria to follow the Darwin's Laws of evolution.

Corona Vaccine Proposals and Their Development

Methods of probe-DNA/RNA isolation have been discussed [1-5, 7-10]. These respiratory viruses are mainly air, dust,-water, human and animal born. Spontaneous mutations have accomplished them to adapt and to search matrix/ vector. For designing vaccine against such infective viral agents, is mediated hybridization could be essential to establish the presence of is in adenoid (DNA) and retro (RNA) viruses, including corona. By cloning HA gene of corona into *E. coli*, the surface antigen of hybrid *E.coli* fimbriae/pili could be used for humoral memory based AAIR, to mobilize T(Thymus derived)- and B(Bursa similar)Lymphocyte -cells, segregated in T- cytotoxic (Tc) and T-Killer (Tk), T-Suppressor (Ts) cells, the generation of Macrophages (WBC, Basophil, and Granulocytes), IF (interferon) and Interleukin (IL). Since is could be available both in mutations and in wild types, it could be useful to classify SERS and MERS and corona variations [1-7]. The evolution of virus is supposed to be caused by the fragments of nucleic acids of the host cells Fig 6(b) [3 -5].

The objective to study the size and phenotypic, surface antigenic properties, SEM /TEM views is to analyse the infective mode of these viruses, at their Nano, micron structures, with maximum uses of surface areas involved in surface cell attachment and spread of infections. Based on above observations, it is established, that these viruses have potential power to utilize their sizes in attachment of targeted cell T-cells in case of HIV, blood cells in case of Dengue and Lung Alveoli cells in case of HINI, Corona and Influenza viruses, to propagate. In our present case of Covid-19, SARS-Cov-2, spike protein of Corona and AEC-I and II of lung cells are specific and the same are not found in HIV, Dengue and Wuhan corona. The spontaneity of infective reaction is due to ss RNA, immediately provides possibility enzymatically to transcribe to translate virus particles in lung cells, using 3' of r-RNA of infected lung cell and 5' of ss mRNA. Envelop of corona is made by glycoprotein, encapsulates ss RNA. of corona after fusions of coat- glycoprotein into lung cell surface membrane, specifically attached to OC43 haemagglutinin type virons, and are released from host cell, as reported, rupturing cell membrane. New virion of corona, transmit immediately through blood throughout the body to infect other body organs. By cold-cough and sneezing they infect the healthy recipients at the distance of 3-6 meter by droplet and as airborne particles, floating as per specific gravity based Archimedes principles and at laminar air flow. Doctors, Physicians and Health care personals are therefore scared to remain in air conditioned closed room and to follow the social distancing. Virus replicates/multiply locally in cells of the ciliated epithelium, causing cell damage and inflammation. The appearance of antibody in serum and nasal secretions follow the infection and increase immunity peaks in the winter as local epidemics and could last for a few weeks or months. The same serotype may return to the same locality after several years. The virus is difficult to isolate. Nucleic acid hybridization tests (including PCR) are now being introduced as control treatment of common colds and within a-symptomatic patients. No vaccines or specific drugs are available till date. Only

vaccine with is element approach could be an alternative solution to face the present crisis, if at all be successful, [7-10].

Coronaviruses are found in avian and mammalian species. They resemble same each other in morphology and in chemical structure. Even coronaviruses of humans and cattle are found same in their antigens, there is no evidence till date that human coronaviruses can be transmitted from cattle and from animals. In animals, corona viruses invade many different tissues and cause variety of diseases, starting as severe respiratory infections/ syndrome. I.e. common colds. On rare occasions, gastrointestinal coronavirus infection has been recorded among children, but these enteric viruses are not well defined. After an incubation period of about 3 days, corona virus can cause the symptoms of a common cold, including nasal obstruction, sneezing, runny nose, and secretions. Presence of corona in multiple sclerosis are also not well defined including their infections, [11-17]. Wuhan corona SEM picture Fig 2 represents the similar 026: EPEC bacterial cluster, as was reproduced by the author during 1983. The curiosity remains, that whether they have the similar adhering and invasive, colonizing nature, as corona on lung epithelial cells, as in 026: EPEC, inspired the author to recapitulate. The colonizing and invasive nature of corona inspired the author to AAIR concepts as it was successful in case of 026: EPEC and its MRHU (+) expressions.

Classification and Antigenic Type

The corona viruses were originally grouped into the family Corona, is known as crown constituted by glycoprotein-studies of envelope of spike proteins Fig2. Most human corona virus fall into one of two groups of 229E and OC43-antigen. These differ in both antigenic determinants and culturing requirements. 229E-like corona viruses can usually be isolated in human embryonic fibroblast cultures. OC43-like viruses can be isolated from suckling mouse brain. There is little antigenic cross-reactions, as occurred between these two antigenic groups, SA-types, caused independent epidemics. It is thought that human coronaviruses enter cells, predominantly, by specific receptors like amino peptidase-N and sialic acid-containing receptors. 229E and OC43 respectively antigenic variants during infection enter the host cell and release their genome RNA to transcribe and to translate. Using 3' (Messenger) mRNAs of the host lung cells and 5′ of (ribosomal) r-RNA of lung cells as shown in Fig 6 (b) are used for translating viral particles, encapsulating ss RNA by coat protein. There are 7 mRNAs are involved in such envelop coat proteins development and are assembled at the cell membrane. The genomic RNA is involved to develop virus particles and to release them from the surface membrane of lung cells by formation of buds. The studies both in organ cultures and in human cells, it is observed that infected cells become vacuolated. Cell damage triggers the production of inflammatory immune response, which increase nasal secretion, local inflammation and swelling to stimulate sneezing, obstruct the airway, and temperature.

The growth of several opportunistic microbial infections, belonging to, *Bacillaceae*, *Coccaceae*, *Chlamydomonas*, family, influence the increasing inflammation, symbiotically survived during corona to damage mucocilliary activity of the respiratory tract, and lung, to bring the patients to death, [18-19]. Interferon (IF) can protect against infective stage, but its expression in human immune system with MHC(Major Histocompatibility Complex-HLA (Human Link Antigen) and macrophages are not clear. In IR, IL (Interleukin10 (IL10), functions are not well defined, especially in case of corona. Because coronavirus infections are common, many individuals have specific antibodies in their nasal secretions, and these antibodies can protect against infection. Most of these antibodies are directed against the surface projections and neutralizing the infectivity nature corona virus. Cell-mediated immunity and allergy have not been studied intensive to confirm the corona allergic inflammations. The epidemiology of coronavirus colds is also not well defined and studied. Herd Immunity concept, which might be developed in America and India and the genetic variants, expressed among human population in these two countries are unique to consider IR through MHC/ HLA, to consider alternative infection movement in case of corona, [11-15].

Vaccine Model Interpretation and Experimental Proposals

As the Wuhan corona virus (COVID-19) epidemic continues to spread and there is still no solution, their preventions (i.e. any vaccine, any T cell based cytotoxic activities on corona). At present there are many pharmaceutical companies and government agencies are working hard to resolve the problem; one strategy to use a live but weakened (attenuated) virus, as was used in chickenpox vaccines. The second is to use a dead (inactivated) virus, as found in flu and polio viruses. The third one system could be used to recovered HPV (Human Papilloma Virus) and shingles, varicella-zoster Fig 6(c). The first two methods require growing virus in a laboratory. They are not easy as bacteria. Viral cell growths need right media and physico-chemical properties. Viruses can't live on their own and must infect another cell in order to survive and to reproduce. So virus culture needs proper selection of virus cell and their types. The respective host cells along with respective virus and media, can be grown inside large tanks (bioreactors). Alternatively, the new corona virus can be grown inside egg cells. For live-attenuated vaccines, viruses were inactivated by heat or by chemical like formaldehyde. Sino Biological, Chinese biotech firm, explains that growing corona viruses poses a bio-safety labs for workers/sciengists. The danger in such vaccination is that, if the virus is not properly attenuated or inactivated, it could provide reverse effect. It has happened with polio in Africa. Report says that subunit vaccines would be safer, since they do not carry complete protein coat of whole viruses. Subunit vaccine needs proper knowledge of virus, (i.e. the types of virus, their DNA and RNA structures, ds, or ss, their genomic sequence, and their mutational variations, as isolated within infective and non-infective phases.

Once this is accursed, then to use same virus in engineering and in attenuating protein vaccines. The French pharmaceutical Giant Sanofi is using this method to target COVID-19.In addition to that there are newer methods to design vaccines, and several companies are testing them in the race against COVID-19. Johnson & Johnson, USA/Canada is using genetic engineering to modify a harmless adenovirus against COVID-19. Inovio is developing a DNA vaccine, while Moderna is creating an mRNA vaccine. (This diagram depicts how DNA and RNA vaccines work), Fig 6 (b,c) represent the procedures applied for RNA and attenuated vaccination and the proposed method applied by the author for the development of AAIR.

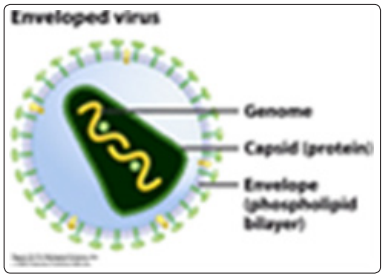

Figure 6a: Represents the ss RNA structure of corona

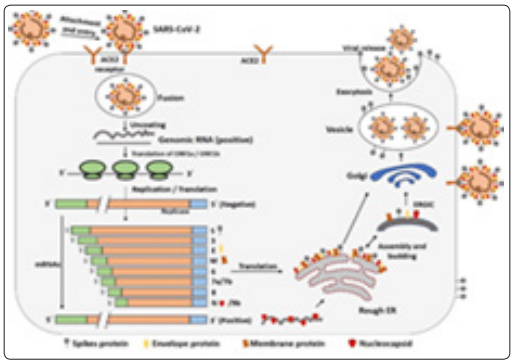

Figure 6b: Desc$ribes the mode of virus development in cells

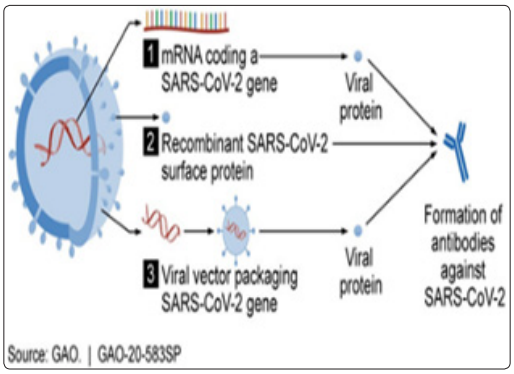

Figure 6c: The antibody developments in support of (I) m-RNA, (II) hybrid, recombinant SA (surface antigen of corona, (III) cloning of ss RNA into a vector plasmid

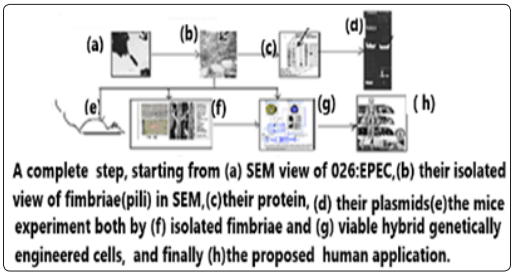

Figure 6d: Describes the combined afford was applied by the author to establish the concept AAIR (Antiadherent of Immune response) in Balb/c mice, developed against 026: EPEC (*Enteropathogenic Escherichia coli*) a fatal diarrhea vaccine

Balb/c mice remained healthy for several weeks at increasing bacterial cell dose, unimmunized mice died in overnight at very low dose. Hybrid GE *E.colik-12 C6600* Yale strain, non-pathogen, was positive to MRHU (+) (D-mannose Resistant haemagglutination of human erythrocytes) similar to 026: EPEC wild type fatal pathogen. Hybrid GE *E.coli k-12* was made by genetically engineered (GE) plasmid. The same proposal with spike protein gene and IS::Tn::IS hybrid recombination , could be very efficient against corona virus specifically, where the spike protein gene will signify, the existence of corona, and IS::Tn::IS will signify the presence of is element in the infective corona, varied among mutant and wild types of infected corona, camouflaged the innate immunity of human body (i.e T-B-Cells and Macrophages and their associated, Interleukin(IL1---IL-10, Interferon (IF), killer(Tk, NK) and cytotoxic (Tc) Memory(Tm, Bm) cells for sustaining the recognizing the mutations and the same could be identified by the existence of any IS::Tn::IS sequence. Volunteer's experiments showed that coronaviruses are extremely fastidious and grow only in differentiated respiratory epithelial cells.More than 90-100 vaccines are being developed against SARS-CoV-2, globally by research teams globally in companies and universities. Researchers are using experiments and begun injecting pharmaceutical products safely into volunteers. For cytotoxic effect against corona, and on the other the development of vaccines including animal trials, many experimental steps are essential.

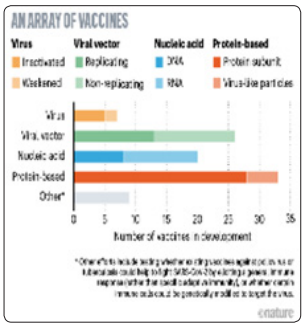

Figure 7: describes the statistical distribution of various vaccine models

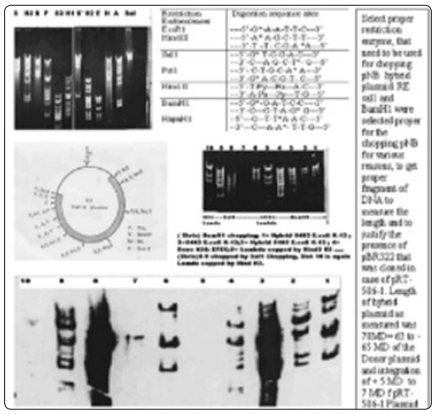

Figure 8: describes the hybridization in plasmid and chromosomes in support of Is1 DNA, cloned in vector plasmid to search AAIR expressed in Balb/c mice. Bottom figure shows hybridization effects reproduced in *Escherichia coli k-12 C600* Yale strain hybrid plasmid, chopped by restriction enzymes

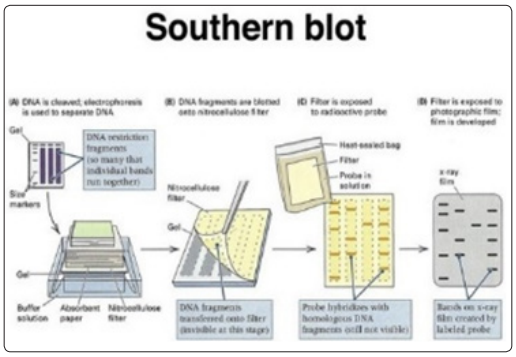

Figure 9: describes the steps were involved in routine Southern hybridizations to locate the presence of is elements in DNA

Is mediated viral spike gene cloning has been proposed to reproduce and their presence in corona and related respiratory viruses.. Is probe was isolated purified from the known source of *E.coli k-12* .the vector plasmids.The same probe could be used to search the presence of is in corona, SARS, MERS, HIV, Influenza viruses. The differences of is element , exposedf in various corona, will help to establish vaccine against corona. Is DNA probe was labelled against p32 alfa d ATP in ss stranded DNA, and were hybridised against ss DNA, and ss RNA of different viruses. Southerns, Northern and Western blots were intensively used

during eighties in Mol.Biology Labs for diagnosis and fundamental studies Fig 9.

Conclusion

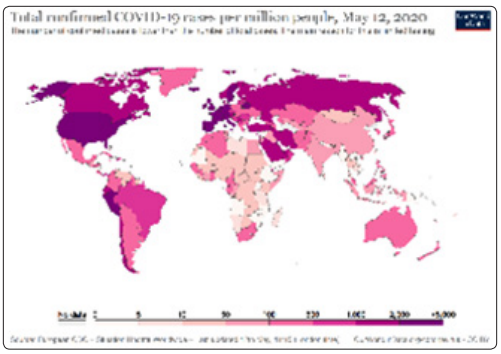

Figure 10a: Describe the data for total confirmed COVOID-19 patients globally during January, 2020. Pink→Violet→Dark Violet, Dark -Violate represents the most affected area of USA, Europe.

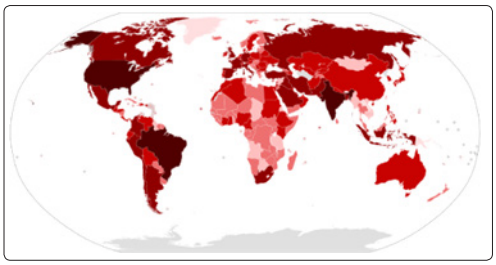

Figure 10b: Shows the rapid changes of pandemics in July 2020 in India

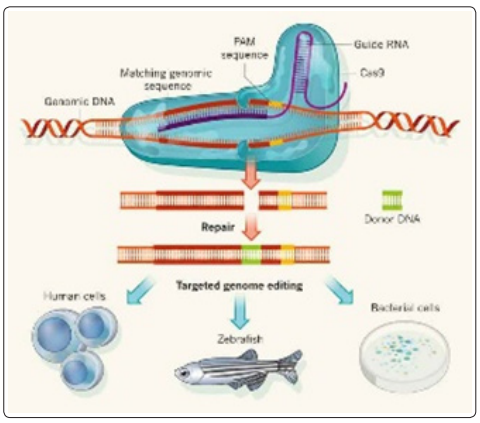

Figure 10c: Shows the structure of Crispr/Cas-9

The vector could be programmed and cloned by non-pathogenic influenza virus RNA/ DNA editing system. Based on the above information the author has taken some initiative to discuss the present crisis of corona. Humoral types of vaccination would be appropriate against future corona infection and are being separated as a-symptomatic, co-morbid class. The corona the Corona pandemic or endemic infections cover many and vast knowledge of information and understanding. Starting from medical and biological sciences, corona treatment needs also good understand of physics and engineering, the movements of molecules and fluids in and around respiratory system. The concept of microfluidics, the molecular transport, the concept of pressure and temperature driven molecular transport, All will be considered to design concept of cytotoxic vaccine of corona. In lung, alveoli, where the adherence of virus is predominant, the adherence mechanisms of corona spikes and its protection by humoral antibodies would perhaps be the ultimate vaccinations of corona. On the surface of lung cell spike proteins of corona manage the biochemical functions of ACE_I and II in cell receptors of lung cell damage. It is also not possible to design vaccine, when virus is already in entry, because virus corona expresses many antigenic variations inside the body. The design of vaccine represents the molecule responsible for humoral immune response must be well known. However, the author believes, that AAIR (Anti-adherent Immune Response) against corona could one of the solutions. Cytotoxic immunity does not allow to prevent the entry of corona virus inside the lung cell and or any organ specific epithelial cells, it will only prevent the growth of corona. Humoral antibody in the human body as AAIR would be appropriate at present to design vaccine with is sequence to prevent corona infection. [1, 4-7, 10-20]. Till date no vaccine has been developed [21-25]. Corona was known to the scientists and medical practitioner since 1978, page 619, but its epidemic and pandemic nature were not discussed [10]. So it might be considered to realize, that corona similarsers-cov-2 virus is continuously mutated to generate SERS, MERS, influenza, H1N1, Swine or Chicken flues and returned back to present corona pandemics Transformed in to insect vector-borne diseases, like mosquito in case of Dengue and Ebola through some other vectors, IS::Tn::IS might have some reason to search and to establish polio like oral vaccine, ultimately to arrest mischievous, corona culprits and to save the mankind. So long the mechanism of infection of corona is not properly understood, it would be difficult to design corona vaccine. The basic objective of the scientists would be to protect the entry of corona virus, i.e. to design AAIR through is mediated DNA→RNA manipulation of corona virus would be one way.

Engineered virus might be suitable to block coronavirus infections. Mouse study shows many responses. A new intranasal vaccine using an RNA virus for gene delivery protects against fatal MERS coronavirus infections in mice, indicates the new direction of vaccination against such severe respiratory corona syndromes. The mice were inoculated by genetically engineered *E.coli*, cloned by IS1::Tn::IS1::Spike protein RNA:::Crispr/Cas-9 programmed non-pathogen influenza Viral RNA. All the mice that received the vaccine Survived against MERS, while the mice that had not received the vaccine did not. The researchers are now applying the same strategy to develop a vaccine for SARS-CoV-2, the virus that causes COVID-19, which has infected more than a million people worldwide, signified the challenge for finding an effective vaccine against the coronavirus that causes COVID-19,left only the race against time, McCray said once, that, one hundred percent of the population if not exposed by the virus, that does not mean that there will be no people or more people will not be infected when it comes again. It is very difficult to say against lasting immunity against SARS-CoV-2 infection, so it's important to think about vaccine to protect the population. The American Society for Microbiology is one of the largest professional societies, dedicated to microbiology, life sciences and is composed of 30,000 scientists and health practitioners. Emphasize also for corona-vaccine [22]. Several pharmaceutical industries are recently involved to develop corona vaccine. "Moderna" set a drug industry with mRNA-1273, a vaccine candidate identified recently after the novel coronavirus was sequenced. "National Institutes of Health "USA describes mRNA-1273 could be used to develop monoclonal antibody and the same could be used safe to prevent corona. "Moderna" took the responsibility to use mRNA. "Food and Drug Administration", USA approved the use of mRNA medicines. Germany's Biotech is working on an mRNA vaccine for the novel coronavirus, mRNA to produce protective antibodies. "Shanghai's Fosun Pharma" jointly moving with Biotech's vaccine in China. Pfizer participated

in co-development of vaccine in collaboration with rest of the world. "Takeda" is approaching preclinical treatment, using blood of people who have already been infected by the coronavirus. Spanish Flu pandemic of 1918, Takeda applied and emphasizes plasma treatment that could take responsible phase in treatment corona patients. According to the company, the therapy could be available to patients in 12 to 18 months. Johnson & Johnson, applied vaccines against Ebola and Zika virus. The company is in the early days of developing a vaccine against corona. Human trials could begin by November. At the same time, J&J is working with the federal Biomedical Advanced Research and developed the authority on potential treatments for patients who are already infected by corona, a process that includes investigating whether any of its older medicines might work against the corona virus. Glaxo-Smith-Kline, one of the world's largest vaccine manufacturers, is lending its technology to a Chinese biotech firm to work on coronavirus vaccine. Stanford University, Schools of Engineering & Medicine, approaching and took the initiative on CRISPR (clustered regularly interspaced short palindromic repeats). CAS (CRISPR associated protein)-9 technology.Crisper-cas-9 will work as transposons and for editing pathogenic corona by non-pathogenic influenza mRNA. The Crispr/cas-9 will edit the pathogenic surface protein of corona spike protein. The Stanley Qi Lab is exploring Crispr technology to combat coronavirus, March 18, 2020, Stanley Qi, a pioneer in Crispr technology tools. However, one challenge is still remain, how long it will take, that Crispr/cas-9 will work against corona, to say "Could Crispr Be Humanity's Next Virus Killer?",

Development of CRISPR as a prophylactic strategy would be useful to combat coronavirus in support of non-pathogenic Influenza m-RNA. Different approaches have been discussed, on spike protein modification by CRISPR-CAS-9, RNA. Scientists are developing hundreds of coronavirus vaccines using a range of techniques, some of which are well-established and some of which have never been approved for medical use before [25]. Whole-Virus vaccines through inactivated, live attenuated, genetic engineering are being partially used against corona virus. Protein or protein fragments, recombinant vaccines, yeast or other cells can be engineered to carry a virus gene and to generate viral proteins, which are then harvested and put into a vaccine. A coronavirus vaccine design would contain whole spike proteins or small pieces of spike protein. This category includes some vaccines could be used for shingles and hepatitis B. However the author's IS::Tn::Tn recombined by spike protein cloned plasmid, transformed into *Escherichia colik-12* and their isolated surface hybrid recombined protein, applied against corona, has not been discussed till date. As a devoted scientist, the author with his matured biological intuition, applied on *Escherichia coli* and on Algae, involved in different fermentations, in genetic engineering, in conversion and in development of AAIR the author believes strongly that "IS::Tn::IS" hybrid, spike protein DNA recombined hybrid GE (Genetically Engineered) E.coli K-12 hybrid protein, along with Crispr/Cas-9 could be applied in bidirectional system, where in AAIR will protect to adhere and on the other Ctispr/Cas-9 will repair pathogenic nature of corona to provide relief and safety of mankind.

References

1. Brahma NK, Schumacher A, Cullum, J and Saedler H (1982) Distribution of the Escherichia coli K-12 Insertion Sequences is1, is2 and is3 Among other Bacterial Species. J. Gen. Microbiol. 128: 2229-2235.
2. Brahma NK (1999) Enterobacterial 026: MRHA-plasmid and its possible Genetic Transformation into Auxotrophic Escherichia coli K-12 C600 NS. Indian J Microbial 38: 43-50.
3. Brahma NK (1999) Genetically Engineered Hybrid 5405 E.coli K-12 fimbriae in vaccination With Balb/c mice against 026: serotype EPEC diarrhea. Ind. J Chem Engg 39: 17.
4. Starlinger P, Saedler H (1976) is Element in Microorganism; Current Topic on Microbiology and Immunology 75: 111-152.
5. Ruediger Schmidt (1982) Transposon; Springende Gene in Bakterien, Erbforschung Heute. Herausgegeben vom Walter Klingmueller, Verlage Chemie, Basel, Switzerland.
6. Saedler H, Ghosal D, Nevers P (1978) The role of Gene Rearrangement in Evolution, Institute For Biology III, Schaenzler Strasse, 1: 7800 Freiburg, Federal Republic of Germany.
7. Maier RM, Pepper IL, Gerba CP (2009) Environmental Microbiology, (2nd Edition), Elsevier, Academic presss.
8. Retro transposons (2018) Source: Carnegie Institution for Science group of UK.
9. Jaidip Dogra, Livodip Dogra (2020) Opportunistic Chlamydia in Corona, "Pratidin Bengali newspaper, Jaipur Central Govt Health Scheme 1-5.
10. Braude AI, Davi, CE, Fierer j (1981) Medical Microbiology and Infectious Diseases, Saunders Pub, International Text Book of Medicine. 619.
11. Tung Thanh Le, Zacharias Andreadakis, Arun Kumar, Raúl Gómez Román, Stig Tollefsen, (2020) The COVID-19 vaccine development landscape. Nature Reviews Drug Discovery 19: 305-306.
12. David AJ Tyrrell, Steven H Myint, (1980) Medical Microbiology. 4th edition, https://www.nih.gov/coronavirus.
13. Dae Gyann Ahn, Wooseong Lee, Jin Kyu Choi, Seong Jun Kim, Ewan P Plant et.al(2011) Interference of Ribosomal Frame shifting by antisera peptide nucleic acids suppresses SARS ,Corona virus replication. Elsevier 91: 1-10.
14. Jei Cui Fang Li, Zang Li Shi (2018) Origin and Evolution of Pathogenic Coronaviruses, Nature Review Microbiology 17: 181-192.
15. F Amana, F Krammer (2020) Immunity 52: 583-589.
16. Felix Boecker, Karin Moelling (2019) Evolution of Immune Systems from Viruses and Transposable Elements. Front Microbiol 10: 51.
17. Mitch Leslie (2020) T-Cell formed in Covid-19, patients "bode cell" for long term Immunity, since.
18. Bonny Rochx, Thijs Kuiken, Sander Herfst Theo Bestebroer, Mart M. Lam et. al (2020) Comparative Pathogenesis of Covid-19 MERS, SARS in a non-human Primate Model. Science, 368: 1012-1015.
19. Amanda Heits (2020) Giant Viruses are not alive. So why have the stolen gene essential for life. Science https://www.sciencemag.org/news/2020/04/giant-viruses-aren-t-alive-so-why-have-they-stolen-genes-essential-life.
20. Dominika Hobernik, Matgias Bros (2018) DNA Vaccine-How Far From Clinical use. Int. J Mol Science 19: 3605.
21. An updated guide to the coronavirus drugs and vaccines in development By Damian Garde@damiangarde (2020) Moderna Therapeutics Approach: Vaccine, ASM Communications.
22. Thanh Le T, Andreadakis Z, Kumar A, Gómez Román R, Tollefsen S, (2020) The COVID-19 vaccine development landscape. Nature Reviews Drug Discovery 19: 305-306.
23. Jonathan Corum, Knvul Sheikh, Carl Zimmer (2020) Different Approaches to a Coronavirus Vaccine.
24. Timothy R Abbott, Girija Dhamdhere, Yanxia Liu, Xueqiu Lin, Laine Goudy, et al. () Development of CRISPR as a prophylactic strategy to combat novel coronavirus and influenza. https://www.biorxiv.org/content/10.1101/2020.0

3.13.991307v1.

25. Tim Abbott (2020) Could Crispr Be Humanity's Next Virus Killer? Stanford scientists are exploring whether gene-editing technology can be used to fight pandemics. But so far, they have just one piece of a larger puzzle. Science, Stanford University.