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Opinion Article

Understanding about Viruses Alive or Not: Virologist

Mohammad A[1*], Rimsha Zakariya[2]

[1]*Department of Forensic Science, Institute for Excellence in Higher Education, Bhopal, Madhya Pradesh, India;* [2]*Forensic Medicine, Eras Lucknow Medical College & Hospital, Uttar Pradesh, India*

INTRODUCTION

Viruses alive first we have to define life it's not very easy to do and many people disagree on the exact definition on what is living but we have to have a definition otherwise we can't answer the question of whether viruses are alive or not so here we go something that's living should have most of these following properties. It should be composed of one or more cells. It should have homeostasis this is the ability to regulate important properties such as pH or temperature. It should have the ability to make or generate energy to grow and to adapt to new environments by evolution also to respond to stimuli like a plant moving towards light and of course it must be able to make more of itself to reproduce here's a model of a simple virus that happens to be poliovirus. The virus particle consists of a protein shell that you can see is this plastic shell that protects the RNA genome that's inside of it on its own this virus particle doesn't meet any of the requirements for being alive it's not a cell it doesn't have homeostasis. It can't make energy can't adapt to new environments. It can't evolve and can't reproduce this particle here can't do any of these things but wait viruses do evolve right and they do replicate of course so what's going on the key is that all the things carried out by viruses happen only after the virus enters a cell that's why we call viruses obligate intracellular parasites in order to make more viruses they need to physically get inside of a cell the virus genetic information whether it's RNA or DNA enters the cell and it reprograms the cell so all of the cell processes are now directed to the making of new viruses that fact lets us answer the question of whether viruses are alive but first we have to define what we mean by virus I define a virus as an organism with two phases, one phase is the virus particle whether it's a simple virus like the one I'm holding or much bigger virus particles with huge genomes and complicated structures like the giant Mimi viruses and Pandora viruses whether it's any of those that virus particle can't do anything, can't reproduce, can't evolve without getting inside of a cell. So that I think the virus particle is clearly not alive. However once the virus is inside of a cell the virus infected cell is certainly alive it's simply a cell which we all agree is living that's been taken over by a virus the living cell has been reprogrammed to make more virus particles in many cases the virus infect itself will eventually be killed by infection but until that happens it's very much alive producing new virus particles a virus then is an organism with two phases. The virus particle which is not alive and the infected cell which is clearly alive when most people say virus they usually mean the vie particle but there's a difference between virus particle and virus infected cell the virus particle isn't alive but the infected cell is I think this is a good solution to the problem that a virus particle can't possibly be alive but has the potential to be living once it enters the cell a virus the organism with two phases is clearly alive.

ACCORDING TO VIROLOGIST

We know about corona viruses before this where the virus might have come from so one thing I can tell you is that this is not a bio-weapon nobody made this virus in the laboratory this is a product of nature what we believe is that the virus probably a long time ago originated from a bat species because there are corona viruses of bats that are very similar to this new corona viruses SARS corona virus but there are other parts of the virus that look more like other animal corona viruses so what we believe is that this is a recombinant so the virus combined from two different species to create a virus that is now infecting humans now we don't know how long the virus was in humans it could be just a few months could be years could be decades but what we do know is that there are a few small changes that were made in the virus that allowed it to spread more rapidly we know that the origin of this virus is different than the original SARS virus bat virus was actually a zone oases it's disease that spreads from animals directly to humans this virus definitely originated in animals probably bats and some other animals too you probably heard on the news talk about this spiny anteater that has some viruses that are similar so what we think is that this virus is a recombinant it probably came from a bat virus plus perhaps one of these viruses from the Pangolin it recombined the genetic material came together and then it probably spread in humans for a while we don't know how long it could be months could have been decades of this virus spreading and evolving in some other animal or humans and then finally just that one little mutation that occurred that allowed it to spread more rapidly.

Correspondence to: Mohammad Athar, Department of Forensic Science, Institute for Excellence in Higher Education, Bhopal, Madhya Pradesh, India, Tel: 9826047806; E-mail: athar.fsl48@gmail.com

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EFFECTIVE WAY TO STOP OR KILL VIRUS

While research into the COVID-19 virus is ongoing, we know the virus is spread mainly when respiratory droplets of an infected person (generating through coughing, sneezing, talking etc) get into mouth, nose or eyes of the people who are nearby. We also now know that people can be infected and spread the virus to others, even without having any symptoms. People may also become infected by touching their mouth, nose or eyes after touching surfaces contaminated with the virus. The virus may survive on surface for few hours up to several days. The good news? Simple disinfectant can kill it. Now what does this mean for your home?

- To give parents a helping hand, we compiled the latest expert information on what is known about COVID-19 and tips to help it out of your home.
- Personal Hygiene: simple hygiene measure can help protect your family's heath and everyone else's
- Don't touch your face: avoid touching your eyes, nose and mouth after touching surfaces contaminated with the virus.
- Don't cough or sneeze into your hands: Cover your mouth and nose with elbow or tissue when coughing or sneezing. Dispose of used tissue immediately.
- Keep your distance: maintain a distance of at least 1 meter (3 feet) from people outside your household.
- Wear a mask in public places: if COVID-19 widespread in your area, a fabric mask should be worn in all public settings where it is difficult to keep a physical distance from others

Monitor for your health daily: be alert for any symptoms of COVID-19 in yourself and your family. Seek medical care early if symptoms develop and stay home except to get medical care

Wash, wash your hands: yes, you're hearing it everywhere because it's the best line of defense. Wash hands frequently with soap and water for at least 20-30 seconds. Make sure to wash hands after you blow your nose, sneeze into a tissue, before putting on and after removing your fabric mask, use the restroom, when you leave and return to your home, before preparing or eating food, applying makeup, handling contact lenses etc.,

If using a hand sanitizer ensure that it contain at least 60percent alcohol ensure coverage on all parts of the hands and rub hands together for 20-30 seconds until hands feel dry. If hands are visibly dirty, always wash hands with soap and water.

Doing laundry at home;

- Clean bed sheets, towel and clothes regularly
- Don't shake dirty laundry to minimize the possibility of dispersing the virus through the air
- Launder items with soap or detergent, using the warmest appropriate water setting and dry items completely-both steps helps to kill the virus
- Wash your hands with soap and water or use an alcohol-based hand rub, immediately afterwards
- Wash or disinfect your laundry bag and hamper as well. Consider storing laundry in disposable bags