



**BHAGAVAD GITA: Chapter 11, Verse 32**

shri-bhagavan uvacha  
kalo 'smi loka-kshaya-krit pravridhho  
lokan samahartum iha pravrittah  
rite 'pi tvam na bhavishyanti sarve  
ye 'vasthitah pratyanyikeshu yodhah

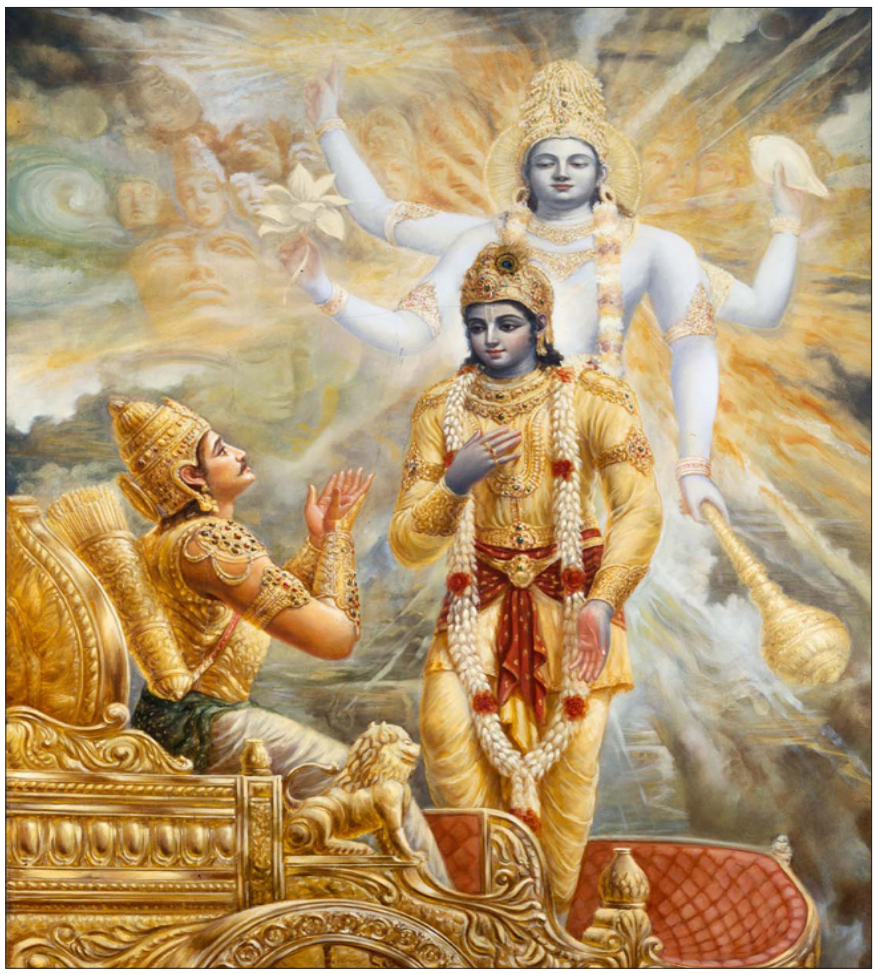
shri-bhagavan uvacha—the Supreme Lord said; kálah—time; asmi—I am; loka-kshaya-krit—the source of destruction of the worlds; pravridhah—mighty; lokán—the worlds; samáhartum—annihilation; iha—this world; pravrittah—participation; rite—without; api—even; tvám—you; na bhavishyanti—shall cease to exist; sarve—all; ye—who; avasthitáh—arrayed; prati-anikeshu—in the opposing army; yodháh—the warriors

◆ TRANSLATION

BG 11.32: The Supreme Lord said: I am mighty Time, the source of destruction that comes forth to annihilate the worlds. Even without your participation, the warriors arrayed in the opposing army shall cease to exist.

◆ COMMENTARY

In response to Arjun's question regarding who he is, Shree Krishna reveals his nature as all-powerful Time, the destroyer of the universe. The word kála is derived from kalayati, which is synonymous with gayayati, meaning "to take count of." All events in nature get buried in time. When Oppenheimer, who was a part of the first atom bomb project, witnessed the destruction of Hiroshima and Nagasaki, he quoted this verse of Shree Krishna in the following manner: "Time...I am the destroyer of all the worlds." Time counts and controls the lifespan of all beings. It will determine when the great personalities like Bheeshma, Dronacharya, and Karn will meet their end. It will destroy the enemy army arrayed on the battlefield even without Arjun's participating in the fight, because the Lord wants it to happen as a part of his grand scheme for the world. If the warriors are already as good as dead, then why should Arjun fight? Shree Krishna explains this in the next verse.



**Scientists Finally See How Antibodies Really Attack Viruses**

Viruses are highly effective at infecting human cells, largely because of specialized proteins that cover their outer surfaces. These proteins are also a key focus for vaccine design. To study them, scientists often create lab-made versions to see how the immune system might respond. However, these simplified versions usually omit important sections embedded in the virus' membrane. Without those pieces, the proteins do not fully behave the way they do in real viruses, making it harder to understand how antibodies recognize and disable them.

Researchers at Scripps Research, working with IAVI and other collaborators, have now developed a new platform that allows these viral proteins to be studied in a form that closely resembles their natural state. The method uses nanodisc technology, where the proteins are placed into tiny particles made of lipids. This creates a membrane-like environment that better preserves their structure and function. As a result, scientists can gain clearer insights into how viral proteins and antibodies interact.

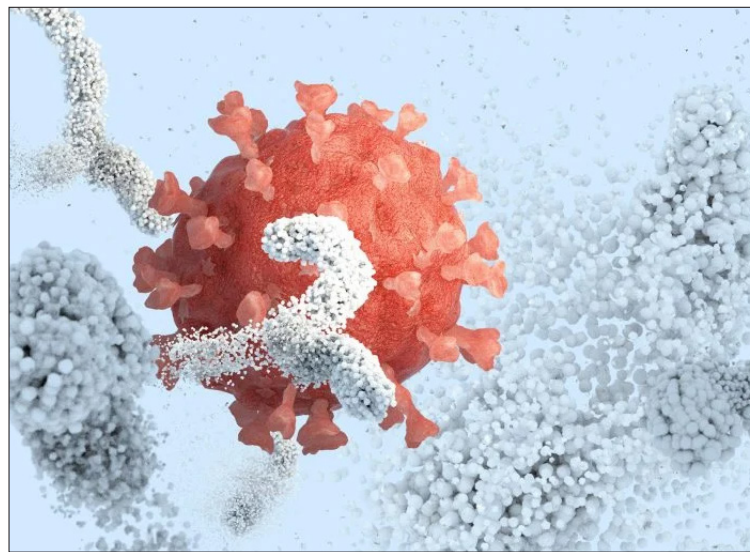
**Nanodisc Technology Improves Vaccine Research**

The new platform, described in Nature Communications, was tested using proteins from HIV and Ebola. These viruses have been particularly difficult targets for vaccines because their surface proteins are not easily recognized by the immune system. The researchers say the same approach could also be used to study other viruses with similar membrane-bound proteins, including influenza and SARS-CoV-2.

"For many years, we've had to rely on versions of viral proteins that are missing important pieces," says co-senior author William Schief, a professor at Scripps Research and executive director of vaccine design at IAVI's Neutralizing Antibody Center. "Our platform lets us study these proteins in a setting that better reflects their natural environment, which is critical if we want to understand how protective antibodies recognize a virus."

**Why Membrane Context Matters for Antibodies**

In actual viruses, surface proteins are anchored within a lipid membrane and arranged in specific shapes. In contrast, many lab studies remove



the membrane-anchoring portion to simplify production and analysis. While this makes experiments easier, it can hide important details. This is especially true for antibodies that target areas close to the base of the protein, near the membrane.

To overcome this limitation, the team incorporated vaccine candidate proteins into nanodiscs, which are small, stable sections of membrane that hold the proteins in place. These lipid discs mimic the outer layer of a virus and help maintain how antibodies would naturally recognize these proteins. The system also supports a wide range of standard techniques used in vaccine development, such as measuring antibody binding, isolating immune cells, and performing high-resolution imaging.

"Putting all of these components together into a single, reliable system was the key," says first author Kimmo Rantalainen, a senior scientist in Schief's lab. "The individual pieces already existed, but making them work together in a way that's reproducible and scalable opens up new possibilities for how vaccines are analyzed and designed."

**New Insights From HIV Antibody Interactions**

To test the platform in detail, the researchers focused on HIV. They examined a conserved region of the virus' surface protein located near the membrane. This area is targeted by a group of antibodies that can block a wide range of HIV variants. These antibodies recognize parts of the virus

that stay relatively unchanged even as the virus mutates, making them especially valuable for vaccine design.

Using the nanodisc system, the team captured detailed structural images showing how these antibodies interact with the viral protein in a realistic membrane setting. These images revealed features that cannot be seen when the protein is studied alone. The findings also suggest how certain antibodies neutralize viruses by disrupting the structures they rely on to infect cells. This information could help guide future vaccines to trigger similar immune responses.

"The structure gave us a level of detail we simply couldn't access before," notes Rantalainen. "It showed us new interactions at the membrane interface and suggested why those matter for antibody function."

**Expanding Beyond HIV to Other Viruses**

The researchers also demonstrated that the platform works with Ebola proteins. In these tests, antibodies were able to recognize and bind to the proteins within the same membrane-like environment, confirming that the approach is not limited to a single virus.

**A Faster Way To Study Immune Responses**

Beyond analyzing structures, the platform can also be used to study how the immune system responds to vaccine candidates. The nanodiscs can act as molecular "bait," allowing scientists to isolate immune cells that recognize viral proteins. This

provides a clearer picture of how the body reacts to different vaccine designs. The system is also faster and more efficient. Processes that once took a month or longer can now be completed in about a week, making it easier to compare multiple vaccine candidates.

**A Tool To Advance Next Generation Vaccines**

Although this platform is not itself a vaccine, it offers a powerful tool to improve how vaccines are developed. It may be especially useful for viruses that have proven difficult to target using traditional methods.

"This gives the field a more realistic, accurate way to test ideas early on," emphasizes Schief. "By improving how we study viral proteins and antibody responses, we hope this platform will help advance next-generation vaccines against some of the world's most challenging viruses."

Reference: "Virus glycoprotein nanodisc platform for vaccine analytics" by Kimmo Rantalainen, Alessia Liguori, Gabriel Ozorowski, Claudia Flynn, Jon M. Steichen, Olivia M. Swanson, Patrick J. Madden, Sabyasachi Baboo, Swastik Phulera, Anant Gharpure, Danny Lu, Oleksandr Kalyuzhnyi, Patrick Skog, Sierra Terada, Monolina Shil, Jolene K. Die-drich, Erik Georgeson, Ryan Tingle, Saman Eskandarzadeh, Wen-Hsin Lee, Nushin Alavi, Diana Goodwin, Michael Kubitz, Sonya Amirzehni, Sunny Himansu, Devin Sok, Jeong Hyun Lee, John R. Yates III, James C. Paulson, Shane Crotty, Torben Schiffrer, Andrew B. Ward and William R. Schief, 10 February 2026, Nature Communications.

DOI: 10.1038/s41467-026-68985-1

In addition to Schief and Rantalainen, authors of the study include Alessia Liguori, Gabriel Ozorowski, Claudia Flynn, Jon M. Steichen, Olivia M. Swanson, Patrick J. Madden, Sabyasachi Baboo, Swastik Phulera, Anant Gharpure, Danny Lu, Oleksandr Kalyuzhnyi, Patrick Skog, Sierra Terada, Monolina Shil, Jolene K. Die-drich, Erik Georgeson, Ryan Tingle, Saman Eskandarzadeh, Wen-Hsin Lee, Nushin Alavi, Diana Goodwin, Michael Kubitz, Sonya Amirzehni, Devin Sok, Jeong Hyun Lee, John R. Yates III, James C. Paulson, Shane Crotty, Torben Schiffrer and Andrew B. Ward of Scripps Research; and Sunny Himansu of Moderna Inc.

*Word of the Day*

**GAMUT**  
noun GAM-ut

**What It Means**  
A gamut is a range or series of related things. When we say that something "runs the gamut," we are saying that it encompasses an entire range of related things.

// The flea market offerings run the gamut with a wide array of vendors each offering something

unique.

**GAMUT IN CONTEXT**

"... she brings a certain je ne sais quoi to the production with themes running the gamut from circuses and rodeos to mermaids and pirates." — Heather Douglas, Coast Weekend (Astoria, Oregon), 23 Apr. 2026

**Did You Know?**

With the song "Do-Re-Mi," the 1965 musical film The

Sound of Music (adapted from the 1958 stage musical by Rodgers and Hammerstein) introduced millions of non-musicians to solfège, the singing of the sol-fa syllables—do, re, mi, fa, sol, la, ti—to teach the tones of a musical scale. Centuries earlier, however, the do in "Do-Re-Mi" was known as ut. Indeed, the first note on the scale of Guido d'Arezzo, an 11th century musician and monk who had his own way of applying syllables to musical tones, was ut. d'Arezzo also called the first line of his bass staff gamma, which meant that gamma-ut was the term for a note written on the first staff line.

**Is it your Birthday Today?**

JUNE 17

Ruled by number 8 and the planet Saturn. You are energetic, hardworking, courageous, trustworthy and friendly. You are a great admirer of literature and good music and you like to associate with like-minded people, but you need to control your tendency to behave impatient, erratic and destructive at times. This year your confidence will grow. You would benefit from remarkable business entrepreneur skills. New projects and assignments would be plenty enhancing your prosperity. Govt. and judicial favours for some. Some misunderstanding with your spouse might bring uneasy moments at home. Later in the year some exhilarating news from overseas will boost up the spirits of the entire family. Travelling would be beneficial for building new alliances. New romances for some. Health of an infant in the family might cause some concern. The months of August, November, January and April will be highly significant.

**SUDOKU PUZZLES**

SOLVE THE PUZZLE AND GET HANDSOME REWARDS. SEND YOUR SOLUTIONS AT: [EARTHNEWSROOM@GMAIL.COM](mailto:EARTHNEWSROOM@GMAIL.COM)

7	6	9						2
				7		1		
			4	9			8	
	4					3		
	2		7		5		9	
		3					5	
	3			8	1			
		8		4				
2						8	7	1

**SOLUTION OF PREVIOUS PUZZLE**

4	6	7	1	8	5	2	9	3
1	3	5	2	4	9	8	7	6
8	2	9	6	3	7	4	5	1
9	1	2	8	7	3	5	6	4
5	4	6	9	2	1	7	3	8
7	8	3	4	5	6	9	1	2
3	9	4	5	6	8	1	2	7
2	7	1	3	9	4	6	8	5
6	5	8	7	1	2	3	4	9

**STARS & PLANETS**

**What is My Zodiac Sign?**

List of Zodiac Signs Based on Birth Dates

Your zodiac sign is determined by your date of birth. You may check the zodiac sign that and find it in a whole panel of zodiac you both side.



**List of 12 Zodiac Signs**

- Aries (Mar 21 - Apr 19)
- Taurus (Apr 20 - May 20)
- Gemini (May 21 - Jun 20)
- Cancer (Jun 21 - Jul 20)
- Leo (Jul 21 - Aug 22)
- Virgo (Aug 23 - Sep 22)
- Libra (Sep 23 - Oct 22)
- Scorpio (Oct 23 - Nov 21)
- Sagittarius (Nov 22 - Dec 21)
- Capricorn (Dec 22 - Jan 19)
- Aquarius (Jan 20 - Feb 18)
- Pisces (Feb 19 - Mar 20)

■ **ARIES:** You were once a creature of reason, Aries. For you, everything had an explanation, a reason to exist, and a place in the world. You never missed a chance to share your viewpoint. Then all of a sudden, silence. Perhaps you needed to get some perspective, not necessarily on the things you know, but on how you express that knowledge. Now words have come back into your life and your ideas are more moderate.

■ **TAURUS:** How about changing roles today, Taurus? It's true that you aren't one for idle chat. You prefer taking action rather than talking about grandiose ideas that never go anywhere. Yet today you may actually feel like discussing things in depth. The stars' alignments are bringing out this other side of you, so take advantage of the energy.

■ **GEMINI:** Scientists are sometimes pretty strange. They can be so engrossed in reality that they seem almost absent from it, as if they float above the Earth. That's a bit how you feel about things, too, Gemini. You like to explain the world in your own special way, the way you see it and not necessarily the way it really is. That's your secret. You know that no one else can see the world the way you do.

■ **CANCER:** As the real Cancer that you are, you aren't in the habit of talking without saying anything constructive. Sometimes people accuse you of having nothing to say. When you're just being patient, they say that you're ignorant. When you're demonstrating your tolerance, they say you're indifferent. Today it's time for those people to learn the real truth about you and understand just how much you have to say about the world.

■ **LEO:** The people around you would really appreciate it if you'd slow down and relax a little. You always seem to be running around, so much so, in fact, that you've been neglecting the people close to you, especially your family. They really need you. They have issues to discuss with you. They need to feel the comfort of your arms.

■ **VIRGO:** You did the right thing to put off those important decisions and not give in to pressure, Virgo. You know well that sometimes it's important to relax and rest for the busy times ahead. Today you'll feel refreshed and ready to tackle the world. You see your problems from a different point of view, and you're much more optimistic about things. Now you can take a calm look at the situation.

■ **LIBRA:** You have a generous nature, Libra. You know how to give and devote yourself to solving the problems others that confide in you. This will still be true today, but not entirely in the same way. In fact, it wouldn't be wise for people to bother you with their problems if they really aren't all that important. It's high time for you to take care of yourself for a while.

■ **SCORPIO:** It's always like this at first with you, Scorpio. You know something is happening but have no idea what. It's as if electricity flows through you. You're practically vibrating with emotion. You can feel other people's emotions, too. Begin by listening to your heart and feeling the sensation in your body. Only then will you be able to judge the intensity of your feelings. Could this be desire - or love?

■ **SAGITTARIUS:** Are you sure that other people wouldn't like you to be in another space than where you are right now, Sagittarius, or even be a different person than the one you always thought you were? These questions are beginning to bother you. Devote some time to thinking about them. The answers you come up with won't be entirely meaningful for a few more weeks. Try looking at the essential things today.

■ **CAPRICORN:** People will understand and appreciate your desire to stand out from the crowd today, Capricorn. This isn't a sign of arrogance on your part. It's just that you're particularly perceptive right now and people need your good advice. Since you're ready to step into the spotlight and shine like the stars that are giving you all this wonderful energy, go for it. You'd kick yourself if you let this opportunity pass.

■ **AQUARIUS:** You love everyone on this planet, Aquarius, and this isn't the day to come bothering you with all the little details of everyday life. You're in orbit, on a voyage to the stars, and this great feeling of freedom is pushing you to demand more justice for all. You might even find the perfect situation today to use your wonderful diplomatic skills. It's the least you can do.

■ **PISCES:** Sometimes you make mistakes because of your lack of objectivity, Pisces. You have a certain tendency to wish that other people were just like you. Yet this won't be the case today. You're using your good sense and reason, or rather your reason is doing the talking for you. It would be a great day for people to listen to you since your judgments have nothing to do with your personal feelings.