



Rayat Shikshan Sanstha's

D. P. BHOSALE COLLEGE, KOREGAON

Department of Microbiology

NOTICE

2024-2025

B.Sc I, B.Sc II and B.Sc III students are here by informed that Department of Microbiology organized QR Code with Wallpaper Presentation on Occasion of Republic Day, dated 26th January 2025 at 09:00 am. All students should remain present at Microbiology Department on time.



Head

Department of Microbiology



Rayat Shikshan Sanstha's

D. P. Bhosale College, Koregaon

Department of Microbiology

Attendance Sheet

Wallpaper Presentation

26th January, 2025

Sr. No.	Name of the Student	Signature
1]	khilare Supriya Tanaji	S.T. khilare.
2]	shaikh Ruksar shabbir	Shaikh
3]	Lohar Anushka madan	AmLohar
4]	Gaikwad shouti naahendra.	SGaikwad
5]	mali Anushka Bhimrao	Pmali
6]	sutar shruti vikas.	S.V. Sutar.
7]	kadam shital Balkrishna.	Ikadam
8]	shinde saniya navneet.	Shinde
9]	Kumbhar Akansha Kishor	Akkumbhar.
10]	kadam Pranali sanjay	Pradim.
11]	Kadam Ankita Amrut	Kadam...
12]	Bhosale Bhagyashri shivaji	BBS.
13]	Bobade Pranali Bajarang	PBBobade
14]	Mane Sanchita Rajendra	Rmane
15]	Dalavi Prachi Vinayak	P.Dalavi.
16]	Guhade shital sitaram.	Shital
17]	Dange Salama Vazir	SDange
18]	Jewale shubham	Shubham





Rayat Shikshan Sanstha's

D. P. BHOSALE COLLEGE, KOREGAON

Department of Microbiology

2024-2025

President : Principal Dr. L.D.Kadam

Head of the Department: Dr. S. P. Nalawade

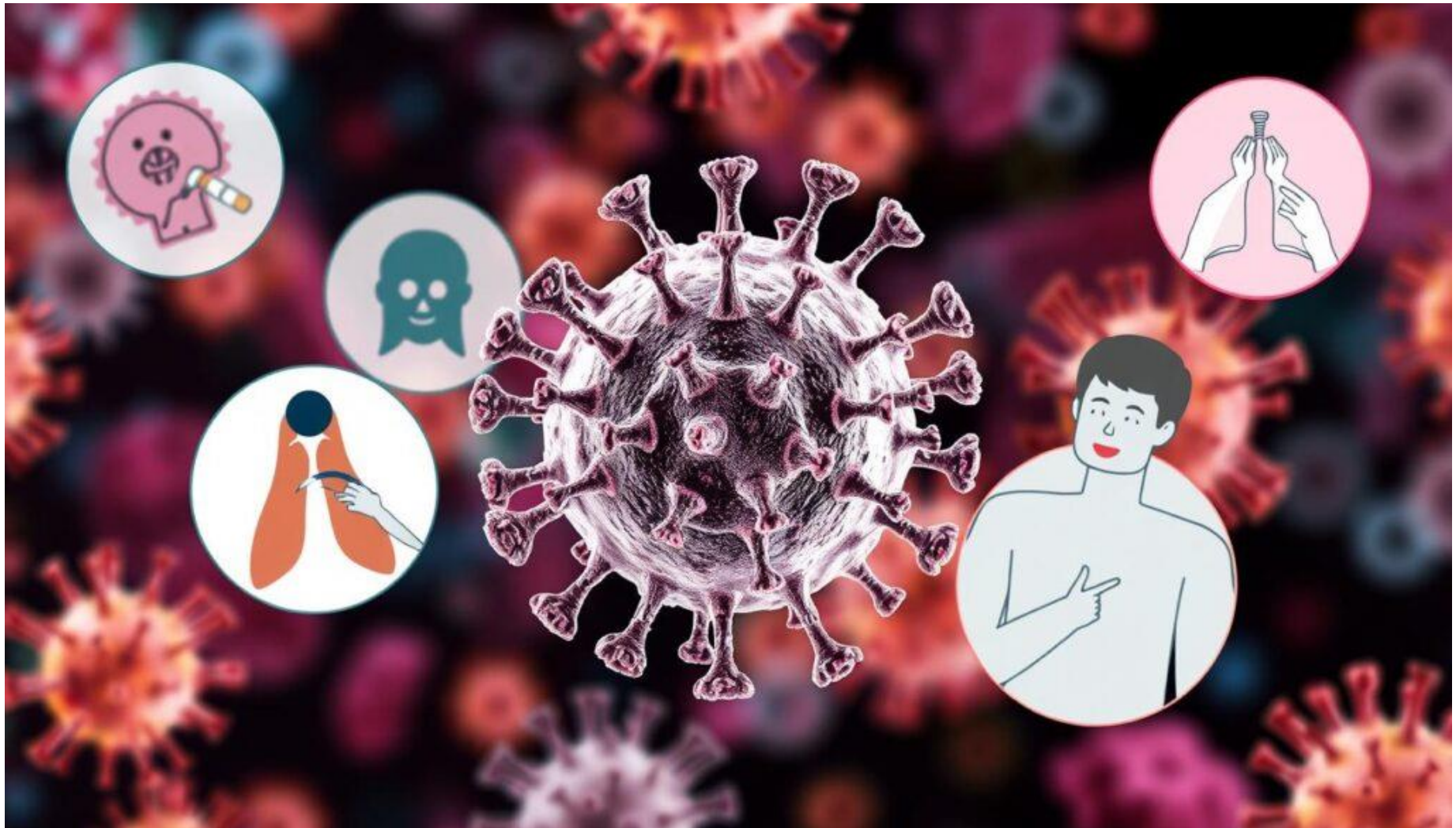
In Charge : Mr. M. M. Jadhav

Faculty Members : 1. Ms. A.U.Gaikwad

**Students Name : 1. Kadam Ankita Amru
2.Kadam Pranali Sanjay
3.Mane sanchita Rajendra**



HMPV VIRUS



Morphology

- **Structure:** HMPV is a member of the family *Paramyxoviridae* and genus *Metapneumovirus*. It is an enveloped, negative-sense, single-stranded RNA virus.
- **Size:** Approximately 150-600 nm in diameter.
- **Genome:** Contains a single RNA segment encoding proteins such as nucleoprotein (N), phosphoprotein (P), matrix protein (M), fusion protein (F), and glycoprotein (G), among others.



Cultural and Biochemical Characteristics

- **Cultivation:** HMPV can be grown in various cell lines, including LLC-MK2 (monkey kidney cells), Vero cells, and HEp-2 cells.
- **Cytopathic Effect (CPE):** The virus induces syncytia (multinucleated giant cells) in infected cell cultures.
- **Biochemical Traits:** Like other paramyxoviruses, HMPV relies on surface glycoproteins (F and G) for attachment and fusion with host cells.



Antigenic Structure

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- **Fusion (F) Protein:** A highly conserved protein responsible for membrane fusion. It is the main target of neutralizing antibodies.
- **Glycoprotein (G):** Facilitates attachment to host cell receptors but exhibits antigenic variability.
- **Cross-Reactivity:** HMPV shares some antigenic similarity with other paramyxoviruses like respiratory syncytial virus (RSV), but it is antigenically distinct.



Modes of Transmission

- **Primary Mode:** Respiratory droplets (coughing, sneezing).
- **Direct Contact:** Via contaminated hands or surfaces.
- **Seasonality:** Predominantly in late winter and early spring, similar to RSV.



Pathogenesis

- **Entry:** HMPV enters the respiratory tract, infecting epithelial cells.
- **Replication:** The virus replicates in the upper and lower respiratory tract, causing inflammation and tissue damage.
- **Immune Response:** Infected cells release pro-inflammatory cytokines, contributing to symptoms. Both innate and adaptive immunity are involved in controlling the infection.



Symptoms

- **Common Symptoms:**
 - Cough, nasal congestion, rhinorrhea (runny nose), and fever.
- **Severe Symptoms:**
 - Bronchiolitis, pneumonia, wheezing, and respiratory distress, particularly in young children, the elderly, and immunocompromised individuals.
- **Asymptomatic Cases:** Often occur, especially in healthy adults.



Laboratory Diagnosis

- **Specimen Collection:** Nasopharyngeal swabs, tracheal aspirates, or Broncho alveolar lavage.
- **Diagnostic Methods:**
 1. **PCR:** Real-time reverse transcription PCR is the most sensitive and specific.
 2. **Antigen Detection:** Immunofluorescence assays (less sensitive).
 3. **Virus Isolation:** Culture in cell lines, although less commonly used due to time constraints.
 4. **Serology:** Detection of specific antibodies (used in research, less common in clinical practice).



Prevention and Control

- **Hygiene Practices:**
 - Regular handwashing.
 - Avoiding close contact with infected individuals.
 - Disinfection of surfaces.
- **Vaccines:** Currently, no licensed vaccine for HMPV, although research is ongoing.
- **Treatment:**
 - Supportive care (oxygen therapy, hydration).
 - No specific antiviral treatment; Ribavirin has been studied but is not widely recommended.
- **Public Health Measures:**
 - Surveillance and early detection of outbreaks.
 - Isolation of symptomatic individuals.





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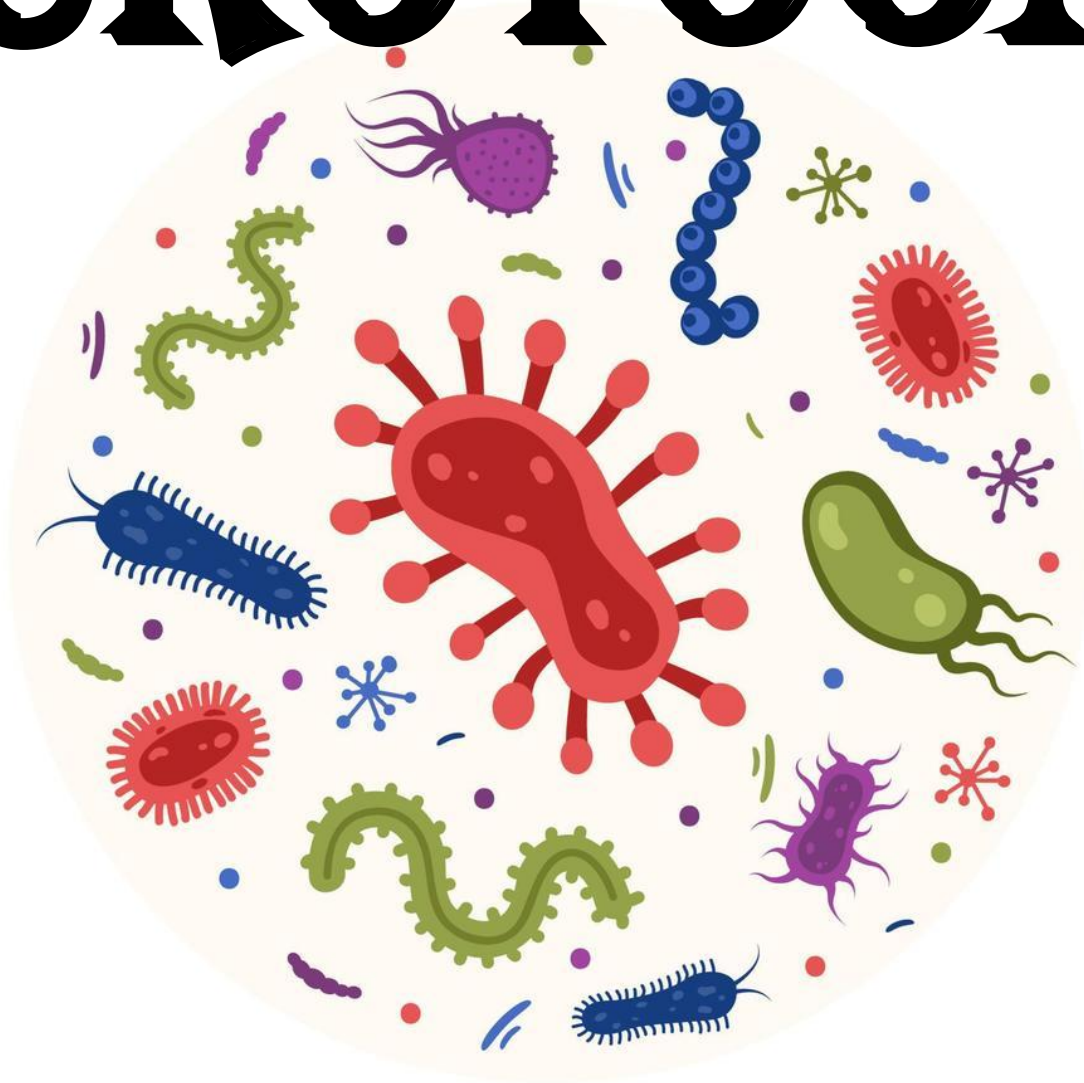
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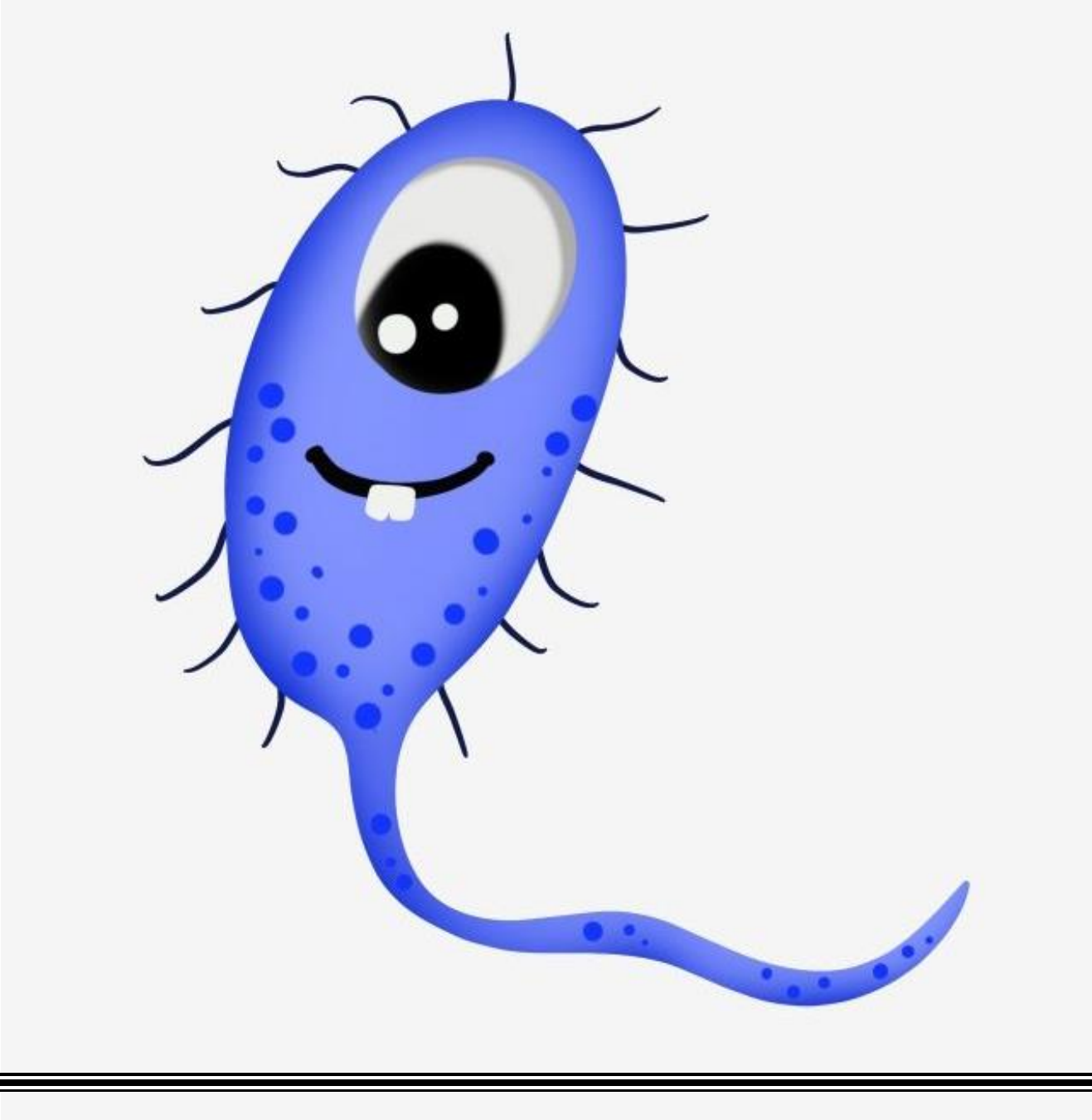
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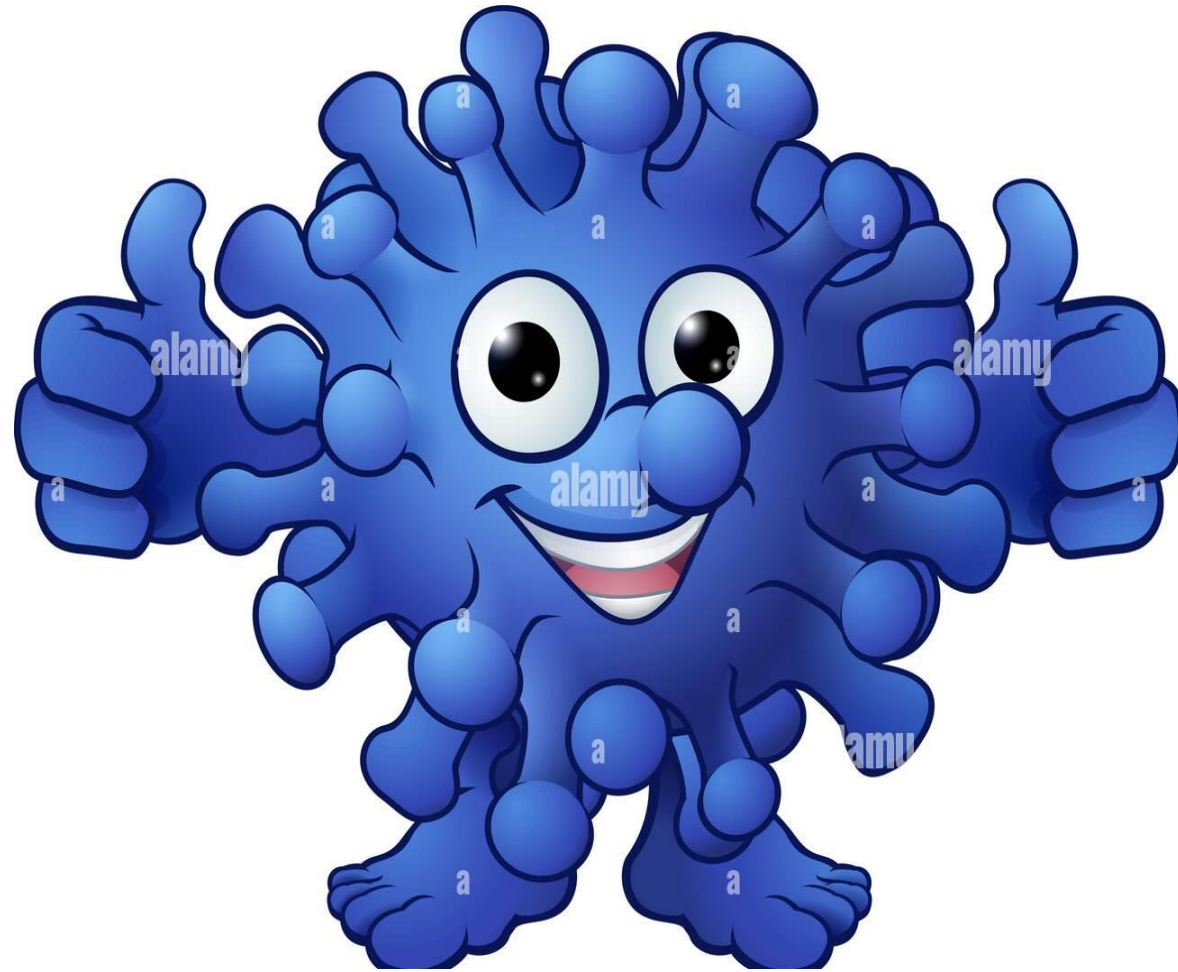


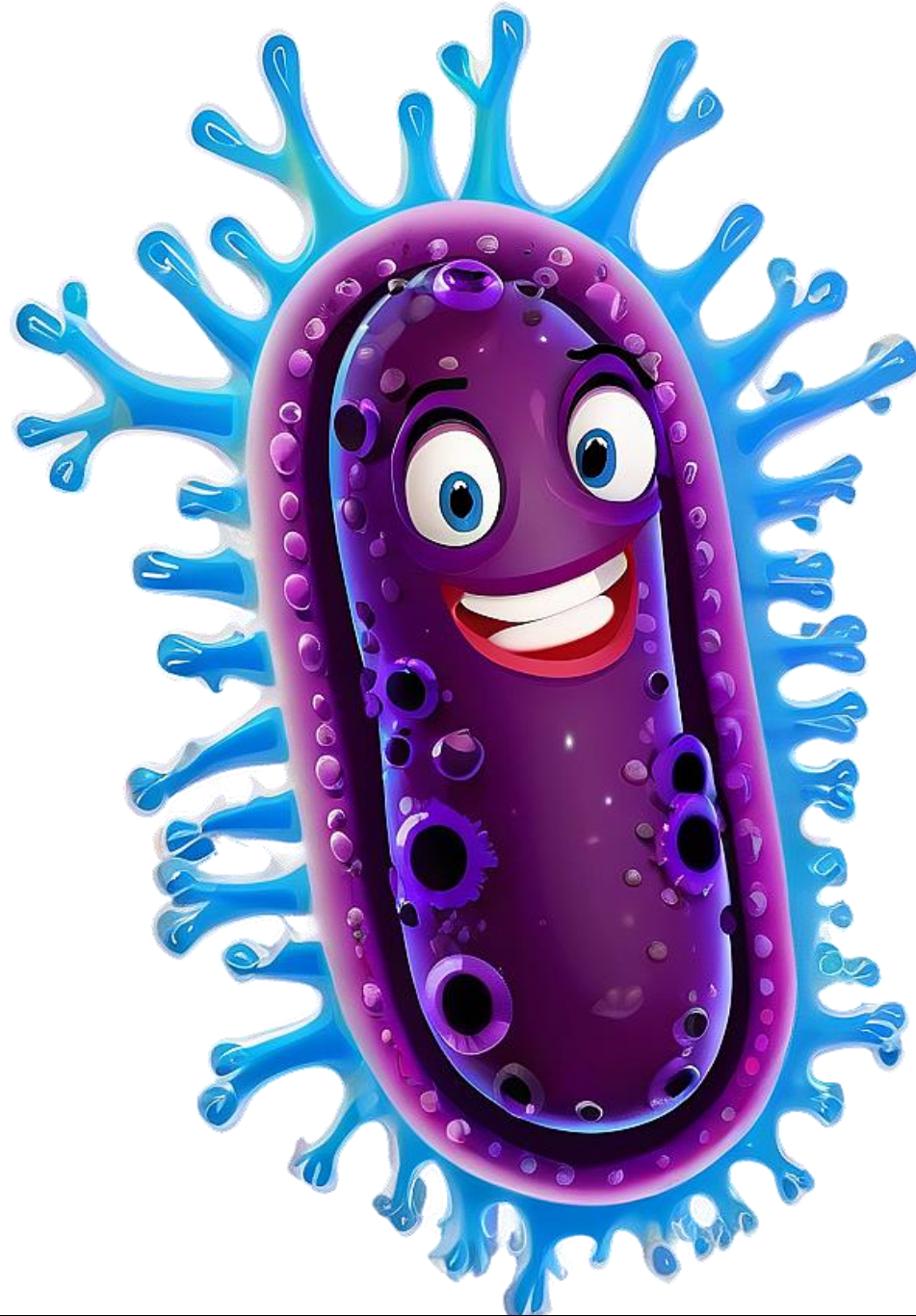
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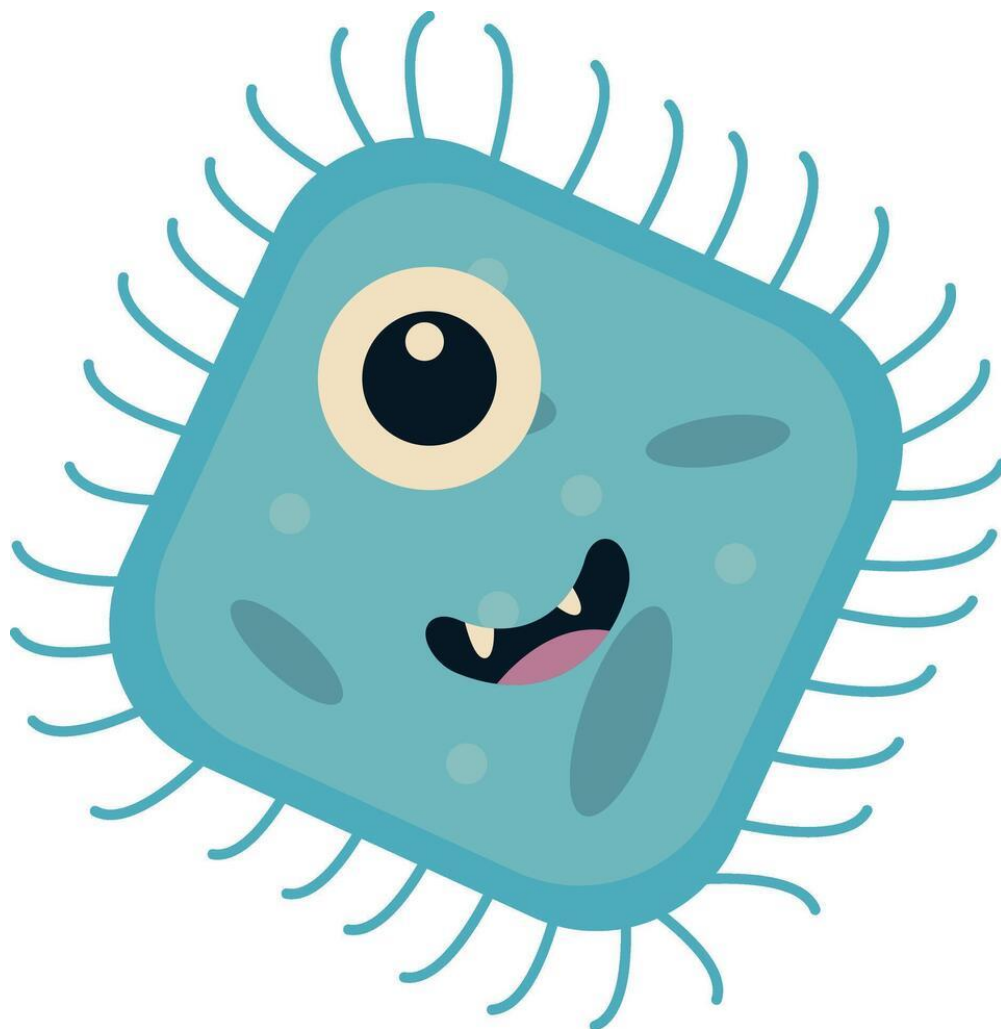


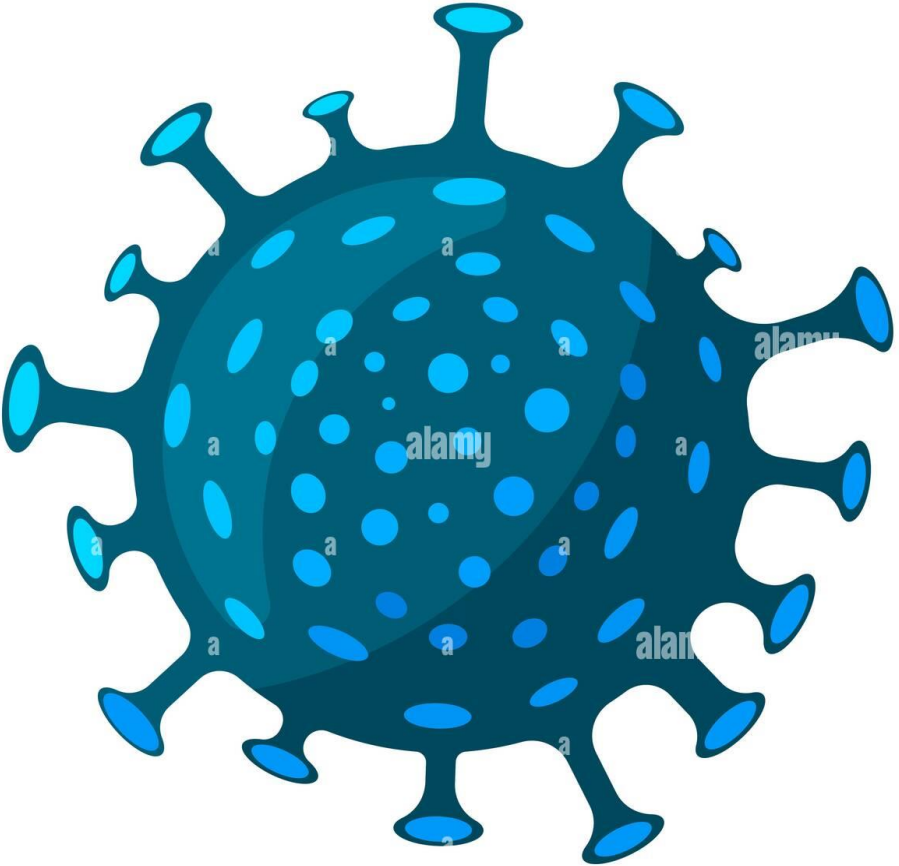














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D. P. BHOSALE COLLEGE, KOREGAON

Department of Microbiology

Wallpaper Presentation

Report 2024-25

The Department of Microbiology at D.P. Bhosale College organized a Wallpaper Presentation for UG students on Sunday, January 26, 2025, in celebration of Republic Day. The event aimed to encourage students' creativity and awareness of life sciences. The wallpaper featured an artistic depiction of the Indian flag integrated with microbiological elements like bacteria, viruses, and DNA strands, symbolizing advancements in biotechnology and healthcare.

The inauguration was led by Principal Dr. L.D. Kadam, in the presence of faculty, students, and dignitaries. Department of Microbiology emphasized the innovative use of QR codes in the wallpaper, showcasing the integration of technology in education.

The event successfully highlighted the connection between science and patriotism, inspiring students to contribute to national progress through their expertise in microbiology.

Beneficiary	Outcomes
18	It's essential to stay informed about HMPV, understand its transmission methods, recognize symptoms, and adhere to preventive practices to reduce the risk of infection.



Inauguration of Wallpaper by Prin. Dr. L.D. Kadam

HEAD
DEPARTMENT OF MICROBIOLOGY
D. P. BHOSALE COLLEGE, KOREGAON

COORDINATOR
Internal Quality Assurance Cell
D.P. Bhosale College, Koregaon

PRINCIPAL,
D. P. Bhosale College,
Koregaon.