THE UNIVERSITY OF TEXAS AT TYLER
INSTITUTIONAL BIOSAFETY COMMITTEE
March 27, 2026

MEMBERS' PRESENT:

Dr. Galina Florova – IBC Chair – Professor Cellular and Molecular Biology
Dr. Buka Samten – IBC Member - Associate Professor of Microbiology
Dr. Dustin Patterson – IBC Member - Professor of Chemistry & Biochemistry
Mr. Christopher Frydenlund - Senior Manager Research Compliance – Biosafety Officer
Ms. Beth R. Filla – Local Non-affiliated member - Bachelor of Science in Agricultural Development
Mr. Michael Medford - Local Non-affiliated member - P.E., CPESC

OTHERS PRESENT:
Recorder Secretary

MEMBERS ABSENT:
Dr. Hua Tang – IBC Member – Professor of Biochemistry
Dr. Wei-Chin Ho – IBC Member – Assistant Professor of Biology
Dr. Dustin Patterson left the meeting at 2:38 pm.

OLD BUSINESS:
The committee continues to meet via TEAMS.

I. CALL TO ORDER:
The meeting was called to order at 1:34 p.m.

II. APPROVAL OF MINUTES:
III. Minutes from January 21, 2026, IBC meeting were approved with minor changes. The committee reviewed the minutes, and a motion was made by Dr. Buka Samten to approve the minutes. Dr. Dustin Patterson seconded the motion.

APPROVE: 6 ABSTAIN: 0 OPPOSE: 0

IV. REVIEW OF IORRC MINUTES:
V. The minutes from the December 17, 2025, meeting were reviewed by the IBC.

VI. CHAIRMAN'S REPORT:
None

VII. OLD BUSINESS:
None

VIII. NEW BUSINESS:

Protocol and Addendum for review

Recombinant DNA protocols

1. **rDNA Protocol -266**

Protocol	(PI)	Project Title	BSL	ABSL	Campus
266	**Dr. Maolin Lu**	**"The Role of Conformational Dynamics of Enveloped Virus Spike Proteins in Cell Entry".**	**2**		**UTHCT**

Project overview:

This project aims to visualize and understand how spike proteins of enveloped viruses enter host target cells by merging viral membranes with cellular membranes, a process driven by spike protein shapeshifting. We will use an integrated platform combining cutting-edge biophysical imaging and virological technologies with computational and structural tools to investigate spike proteins of multiple enveloped viruses, including HIV, SARS-CoV-2, and hRSV, with the potential to extend our efforts to emerging viral pathogens that pose public health burdens. The studies are expected to allow us to identify the common and divergent traits of spike protein-mediated fusion processes, advancing our knowledge and helping us define the common theme of the type-I fusion mechanism. This research, using advanced technologies, will reveal unrecognized insights into virus entry that will lay the foundation for advances in anti-viral interventions. HIV: Human Immunodeficiency Virus SARS-CoV-2: Severe Acute Respiratory Syndrome Coronavirus 2 hRSV: Human Respiratory Syncytial Virus

Applicable NIH Guidelines: Section II-A-3, III, and IV-B-2-b

Major points of discussion:

- Agent characteristics (e.g. virulence, pathogenicity, environmental stability)
- Types of manipulations planned.
- Source(s) of the nucleic sequences (e.g., species)
- Nature of the nucleic acid sequences (e.g., structural gene, oncogene)
- Host(s) and vector(s) to be used
- Whether an attempt will be made to obtain expression of a transgene, and if so, the function of the protein that will be produced.

The following will be communicated to the PI:

Page 1 Designated area: Please clarify if the project will be done in Lab C1, C2 or BSL2.
Page 2 Experimental Plan in lay terms: Editorial changes are required.
Page 3 3. Scientific objective: Editorial changes requested.
4. Significance: Editorial changes requested.
Page 5 C. Gene: Please clarify the pathogenicity of the genes.
Page 7 Risks to humans: Please clarify where the work with nucleic acids and protein expression will be done.

The committee reviewed the protocol, and a motion was made by Dr. Dustin Patterson to approve the protocol. Dr. Buka Samten seconded the motion.

APPROVE: 6 ABSTAIN: 0 OPPOSE: 0

2. rDNA Protocol -267

Protocol	(PI)	Project Title	BSL	ABSL	Campus
267	Dr. Dustin Patterson	"Encapsulation of RNA Molecules Inside the HK97 VLP"	1		MAIN CAMPUS

Project overview:

The research looks at utilizing virus-like particles (VLPs), non-pathogenic protein cage structures derived from bacteriophage (viruses that infect bacteria, not mammals), for the encapsulation and delivery of RNA molecules. The VLP platform of interest is the HK97, derived from a bacteriophage whose native host is *E. coli*. The research looks to at the encapsulation of RNA molecules by exploiting a REV peptide fused to the GP4 targeting peptide that binds to the coat protein (GP5) of HK97 during in vitro disassembly and reassembly. Modifications to the HK97 GP5 protein by modification to the surface with targeting molecules, either by synthetic addition or genetic addition, will be used to allow specific cell targeting. The goal is to initially show viability of utilizing HK97 VLPs for the delivery of mRNA encoding fluorescent proteins to show proof of concept that mRNA molecules can be delivered into cells using the HK97 VLP.

Applicable NIH Guidelines: Section II-A-3, III, and IV-B-2-b

Major points of discussion:

- Agent characteristics (e.g. virulence, pathogenicity, environmental stability)
- Types of manipulations planned.
- Source(s) of the nucleic sequences (e.g., species)
- Nature of the nucleic acid sequences (e.g., structural gene, oncogene)
- Host(s) and vector(s) to be used
- Whether an attempt will be made to obtain expression of a transgene, and if so, the function of the protein that will be produced.

The following will be communicated to the PI:

Page 1 **Proposed project period from**: End period should be 04/30/2029

- Name of the funding source: Please add the funding source.
- Personnel involved in the project: Please add the names of the personnel that will be working on the project.
- Approval Protocol: Please add N/A if you do not have any protocol approved.

Page 2 **Experimental Plan in Lay Terms**: Please rewrite this paragraph in ley terms and Clarify what is the goal of the study and how you are planning to reach the goal.

Page 4 **6. Hosts:**

- Please discuss hosts in this section.
- Please provide the resistance markers of the hosts information.
- Please provide what commercial source you are planning to use.

Page 5 **Vector:**

- Please provide the list of the vectors, their name(s), relevant components of the vectors.
- Please include replication requirements (bacteria, yeast, higher eukaryotes), type and origin of the promoter, viral components, and drug resistance markers (constitutive and inducible)
- and pathogenicity of the vector. List the source.

Gene: Please provide the source of the genes. Please discuss genes (their function, pathogenicity and relevant characteristics) in this section not the proteins they encode.

Deliberate attempts will be made to express the following gene:

- Please clarify what genes you want to express.

Page 6 **Potential biohazards and safety considerations**: Please clarify if any proteins in the proposed protocol will be labeled.

C. Animals: Please state "none".

The committee reviewed the protocol, and a motion was made by Dr. Samten to approve the protocol. Mr. Frydendlund seconded the motion.

APPROVE: 5 ABSTAIN: 0 OPPOSE: 0

IX. ADJOURNMENT:

The meeting was adjourned at 3:18 p.m.

DocuSigned by:
Galina Florova 7/24/2026
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Galina Florova, Ph.D. – Chair
Institutional Biosafety Committee

Certificate Of Completion

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Envelope Updated	Security Checked	7/21/2026 10:26:10 AM
Envelope Updated	Security Checked	7/21/2026 10:26:10 AM
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Signing Complete	Security Checked	7/24/2026 4:12:43 PM
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