

Tail Fiber STFC



Overview

Forms tail fibers that play a role in primary attachment of virion to host receptors. Fibers are about 35nm long and have a thin, uniform diameter. They bind in a. Tail fibers, a major class of RBPs, are elongated and flexible trimeric pro-teins, making their full- length structures difficult to resolve experimentally. Advances in deep learning-based protein structure prediction, such as AlphaFold2- multimer (AF2M) and ESMFold, provide opportunities for. In this paper, we introduce RBPseg, a method that combines monomeric 23 ESMfold predictions with a novel sigmoid distance pair (sDp) protein segmentation technique. We demonstrate that. Bacteriophage infection, a pivotal process in microbiology, initiates with the phage's tail recognizing and binding to the bacterial cell surface, which then mediates the injection of viral DNA. FASTA' files (using the sDp. Assembles together with p132 to form the three L-shaped long tail fibers and the collar structure at the junction between the tail tube and the conical tail tip (PubMed: 24198424).



Article Content

Ares_viral_fibers_AAM

Viral fibers play a central role in many virus infection mechanisms since they recognize the corresponding host and establish a mechanical link to its surface. Specifically, bacteriophages have

Tail fiber Definition for Microbiology | Fiveable

Tail fibers determine the host range of a bacteriophage by binding to specific receptors on bacterial cells. They undergo conformational changes upon binding, facilitating attachment and subsequent insertion

Towards a complete phage tail fiber structure atlas

RBPseg workflow in detail, step-by-step demonstrating the 682 architecture of RBPseg using TC14 fiber as example. A FASTA file is input to ESMfold, which 683 generates a monomeric model.

Subtypes of tail spike proteins predicts the host range of

As the first step in the infection cycle, tailed phages adsorb to the bacterial surface using their receptor-binding proteins (RBPs) located at the tip of the tail. Such RBPs often form long or

Towards a complete phage tail fiber structure atlas | bioRxiv

To validate our approach, we used single-particle cryo-electron microscopy to analyze five tail fibers from three phages of the BASEL collection. Additionally, we conducted a structural

Ribbon Fiber Pigtails with SC/FC/LC/ST Versions

OMC ribbon fiber pigtails with SC/FC/LC/ST connectors, featuring a well-structured design for easy wiring and efficient fiber optic deployment with fiber cable pigtail.

Structure of the bacteriophage T4 long tail fiber receptor

Bacteriophages are the most numerous organisms in the biosphere. In spite of their biological significance and the spectrum of potential applications,

Discovery, structural characteristics and evolutionary analyses of ...

In this study, we conducted a comprehensive analysis of the tail fiber/spike proteins from 204 A. baumannii phages. By constructing a proteomic tree and systematically annotating 313 tail

The role of side tail fibers during the infection cycle of phage lambda

Up to now, the role of the side tail fibers during the infection cycle, especially at the single-cell level, remains largely unknown.

Evaluating Phage Tail Fiber Receptor-Binding Proteins

While this manuscript only demonstrates our assay's ability to characterize adsorptive capabilities of phage tail fibers, our assay could feasibly

Phage tail fibre assembly proteins employ a modular structure to drive ...

Here, we investigate the tail fibre and Tfa of Escherichia coli phage Mu. We demonstrate that Tfa forms a stable complex with the tail fibre, and present a 2.1 Å resolution X-ray crystal...

Small ubiquitin-related modifier-fused bacteriophage tail fiber protein ...

Small ubiquitin-related modifier-fused bacteriophage tail fiber protein with favorable aqueous solubility for lateral flow assay of Pseudomonas aeruginosa

Structural Insights into the Chaperone-Assisted Assembly of a ...

Structural analysis enabled us to propose the assembly mechanism of phage tail fibers, in which the chaperone first protects the intertwined and repetitive distal moiety of each fiber subunit,

Mapping the tail fiber as the receptor binding protein responsible for ...

Mapping the tail fiber as the receptor binding protein responsible for differential host specificity of Pseudomonas aeruginosa bacteriophages PaP1 and JG004.

RBPseg: Toward a complete phage tail fiber structure atlas

Here, we introduce RBPseg, a method that combines monomeric ESMFold predictions with a structural- based domain identification approach, to divide tail fiber sequences into

Fiber cable termination

Fiber Optic cable termination is the addition of connectors to each optical fiber in a cable. The fibers need to have connectors fitted before they can attach to other equipment.

Understanding Bacteriophage Tail Fiber Interaction with

Here, we discuss the molecular mechanisms and models of the tail fibers of the well-characterized T4 phage's interaction with host surface

RCSB PDB

This study revealed the high-resolution cryo-electron microscopy (cryo-EM) structures of the bacteriophage lambda tail complexed with its

RBPseg: A Tool for Tail Fiber Structure Prediction

RBPseg is a pipeline designed to predict and analyze phage tail fiber proteins. It has three major modules.

R pyocin tail fiber structure reveals a receptor-binding domain with a ...

R pyocins are ϕ CTX-like myophage tailocins of *Pseudomonas* sp. Adsorption of R pyocins to target strains occurs by the interaction of tail fiber proteins with core lipopolysaccharide (LPS).

Towards a complete phage tail fiber structure atlas

The partial phage tail fiber atlas. a) Network connecting the TC with phage family or 482 subfamily. Node size is proportional to number of proteins

The relationship between optical cables, terminal boxes, and tail fiber

In fiber optic communication systems, optical cables are used to transmit light signals over long distances. Terminal boxes are used to connect and protect the fiber optic cables at various

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