New type of tail fiber channel

Overview

In this paper, we introduce RBPseg, a method that combines monomeric ESMfold predictions with a novel sigmoid distance pair (sDp) protein segmentation technique. This method segments the tail fiber sequences into smaller fractions, preserving domain boundaries. These segments are then predicted in parallel using AF2M and assembled into a 26 full fiber. Here, we discuss the molecular mechanisms and models of the tail fibers of the well-characterized T4 phage's interaction with host surface receptors. Structure–function knowledge of tail fibers will pave the way for reprogramming phage host range and will bring future benefits through. The T5 family of viruses are tailed bacteriophages characterized by a long non-contractile tail. The bacteriophage DT57C is closely related to the paradigmal T5 phage, though it recognizes a different receptor (BtuB) and features highly divergent lateral tail fibers (LTF). Considerable portions of. Tail fibers, a prominent type of RBP, are typically elongated, flexible, and trimeric proteins, making it challenging to obtain high-resolution experimental data of their full-length structures.

Article Content

Fibre Channel Outlook 2021 and Beyond

Multiple topologies—Fibre Channel supports point-to-point (2 ports) and switched fabric (224 ports) topologies. Multiple speeds—Products are available supporting 8GFC, 16GFC, and

FIBRE CHANNEL SOLUTIONS GUIDE

T11 is continuing to develop aspects of Fibre Channel to protect customer investment and bring Fibre Channel based solutions into new markets. These advances include higher speeds, advanced

Towards a complete phage tail fiber structure atlas.

Bacteriophages use receptor-binding proteins (RBPs) to adhere to bacterial hosts. Understanding the structure of these RBPs can provide insights into their target interactions. Tail

Understanding Fiber Optic Pigtails: Types and

Fiber Optic Pigtails are divided into single-mode and multimode types, which can be distinguished by color, wavelength, and transmission

Towards a complete phage tail fiber structure atlas | Sciety

Recent advancements in deep learning-based protein structure prediction, such as AlphaFold2-multimer (AF2M) and ESMfold, allow for the generation of high-confidence predicted

An ensemble pipeline, PhageHost, for phage tail fiber discovery and ...

Wu et al. present an ensemble pipeline, PhageHost, comprising a protein language model, TailSeek, for tail fiber detection from phage and prophage genomes and a deep learning

Understanding Bacteriophage Tail Fiber Interaction with

Recent significant advances at single-molecule and atomic levels have begun to unravel the structural organization of tail fibers and underlying

Structures of the tailed bacteriophages that infect Gram-positive ...

Twelve tail fibers or appendages extend from and hang around the bulge at the junction of the head and the tail [7••, 8••, 36, 40]. The tail tube is assembled by 12 copies of one tail protein, of

Decoding Fiber Optic Connectivity: Jumper Cables vs. Tail Lines in ...

In the ever-evolving landscape of telecommunications, understanding specialized networking components becomes crucial for both professionals and enthusiasts. Two terms frequently popping

Asymmetric Structure of Podophage GP4 Reveals a Novel

In this study, we identified a new structure of the podophage with three types of tail fibers, and such phages with different types of fibers may have a broad host range and/or infect host cells

Nearly complete structure of bacteriophage DT57C reveals

The bacteriophage DT57C is closely related to the paradigmal T5 phage, though it recognizes a different receptor (BtuB) and features highly divergent lateral tail fibers (LTF).

Tall tails: cryo-electron microscopy of phage tail DNA

The majority of phages, viruses that infect prokaryotes, inject their genomic material into their host through a tubular assembly known as a tail.

Nearly complete structure of bacteriophage DT57C reveals

Nearly complete structure of bacteriophage DT57C reveals architecture of head-to-tail interface and lateral tail fibers Received: 10April2023

The Fibre Channel Roadmap

A printed two-sided map that shows the speeds of Fibre Channel and Fibre Channel over Ethernet on the front side and Storage Area Networks on the backside. The printed map that will be given away

Tail Fiber: Types, Functions, and Common Interfaces

Similar to fiber optic jumpers, tail fibers are classified into single-mode and multimode types, differing in color, wavelength, and transmission distances. Generally, multimode tail fibers are

Nearly complete structure of bacteriophage DT57C reveals

The T5 family of viruses are tailed bacteriophages characterized by a long non-contractile tail. The bacteriophage DT57C is closely related to the paradigmal T5 phage, though it recognizes a

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.

Understanding Bacteriophage Tail Fiber

This strategy involves growing wild-type phages in various hosts for several generations to generate mutants (mainly in tail fibers) that infect new hosts. For example, the host range of T7 phage was

Nearly complete structure of bacteriophage DT57C reveals

Here, we present the structure of DT57C determined by cryo-EM, and an atomic model of the virus, which was further explored using all-atom molecular dynamics simulations.

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Hier sollte eine Beschreibung angezeigt werden, diese Seite lässt dies jedoch nicht zu.

Major tail proteins of bacteriophages of the order Caudovirales

Finally, we summarize the structural elements of major tail proteins and conceptualize how different amounts of tail tube flexibility confer heterogeneity within cryo-EM maps and, thus, limit high

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

FIBRE CHANNEL

Adoption of Fibre Channel as the enterprise storage networking transport of choice continues to remain strong. The year 2021 is a milestone, for it is forecasted by Quillin Research1 the number of Fibre

The Complete Guide to Pigtail Fibers: Simplifying

Let''s unravel what makes these tiny cables so essential. What Are Pigtail Fibers? A pigtail fiber is a short, pre-terminated optical cable with a

Structures of T7 bacteriophage portal and tail suggest a viral DNA ...

Using high-resolution cryo-electron microscopy and X-ray crystallography, here we describe various structures of the T7 bacteriophage portal and fiber-less tail complex, which suggest

Molecular anatomy of the receptor binding module of a

Author summary Bacteriophage (phage) T4 belongs to myoviridae, a widely distributed family of viruses on Earth. They contain a head (capsid), a

An ensemble pipeline, PhageHost, for phage tail fiber discovery and ...

Building on TailSeek predictions, we developed HostBuster, a deep learning framework that integrates tail fiber features with host-specific information to predict the lytic potential of phage-

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