Tail Fiber Classification Code

Article Overview

Phage tail fibers are structurally classified into 16 distinct classes and 89 domains using the RBPseg pipeline, which segments and models fibers based on structural features.

Overview of Tail Fiber Classification

Tail fibers are a major class of receptor-binding proteins (RBPs) in bacteriophages. They are typically elongated, flexible, and trimeric, making experimental resolution of their full-length structures challenging . To address this, the RBPseg pipeline uses deep learning-based protein structure prediction tools like ESMFold and AlphaFold2-multimer (AF2M) to segment tail fiber sequences into smaller, manageable fractions while preserving domain boundaries .

RBPseg Methodology
• Monomeric Prediction: ESMFold predicts the monomeric structure of the tail fiber protein.
• Pseudo-Domain Identification: The sequence is divided into pseudo-domains using a sigmoid distance pair (sDp) matrix, which groups residues with similar prediction confidence and spatial proximity .
• Fraction Generation: Consecutive pseudo-domains are combined into fractions, with overlapping residues to facilitate superimposition.
• Trimer Modeling: Each fraction is modeled as a trimer using AF2M.
• Merging Fractions: Fractions are superimposed based on overlaps, paired, and connected to assemble the full fiber structure, followed by Amber relaxation for refinement ….

© 2026 Khanimambo Critical Industry Optical Networks - All rights reserved

Article Content

Apr 24, 2026

RBPseg: A Tool for Tail Fiber Structure Prediction

RBPseg: A Tool for Tail Fiber Structure Prediction Table of Contents About Installation Requirements Usage Examples Example 1:

Oct 16, 2025

How to create an Informed Compliance Publication

This publication, prepared by the National Commodity Specialist Division, ORR, is a study of the classification of fibers and yarns.

Jul 18, 2026

RBPseg/README.md at main · VKleinSousa/RBPseg · GitHub

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

Feb 04, 2026

RBPseg : Science Advances

A structural classification of 67 fibers identified 16 distinct classes and 89 domains, revealing patterns of modularity,

Apr 28, 2026

RBPseg: Toward a complete phage tail fiber structure atlas

Tail bers, a major class of RBPs, are elongated and exible trimeric pro-teins, making their full- length structures di cult to resolve

Nov 25, 2025

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

Dec 04, 2025

Towards a complete phage tail fiber structure atlas

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

Aug 10, 2025

© 2026 Khanimambo Critical Industry Optical Networks - All rights reserved

Nimrod198/eCIS_tail_fibers

We identified 3,445 eCIS tail fiber proteins found in 2,585 eCIS loci from 1,069 microbes. These fibers can be categorized by five new

Aug 21, 2025

Towards a complete phage tail fiber structure atlas

Additionally, we conducted a structural classification of 67 fibers and their domains, which identified 16 well-defined tail fiber classes

Mar 24, 2026

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

Nov 21, 2025

HS Code Fiber Optic Cable Classification: A Comprehensive Guide

HS Code Classification for Fiber Optics Products: A Comprehensive Guide Fiber optics technology has revolutionized

Jan 13, 2026

Organic Cotton Fiber Classification Guide

Textile Exchange is a nonprofit, tax-exempt charitable organization (tax ID number 33-1034726) under Section 501 (c)

May 16, 2026

The Classification of Cotton

The USDA cotton classification system has transformed from reliance on human senses to use of precision instruments that analyze

Sep 02, 2025

GENERIC FIBRE NAMES | BISFA

Just as BISFA supports the application for new generic fiber names in the textile sector, regulatory bodies in the healthcare industry

May 18, 2026

CLASSIFICATION OF TEXTILE FIBERS

Fibers are classified by their chemical origin, falling into two groups or families: natural fibers and manufactured fibers. Manufactured

© 2026 Khanimambo Critical Industry Optical Networks - All rights reserved

Apr 13, 2026

Fiber Optic Cable Color Codes

Color codes are used in fiber optics to identify fibers, cables and connectors. In the photos above, on the

Apr 13, 2026

Tail Fiber: Types, Functions, and Common Interfaces

Classification of Tail Fibers Similar to fiber optic jumpers, tail fibers are classified into single-mode and multimode

Nov 26, 2025

RBPseg: Toward a complete phage tail fiber structure atlas

Overall, our approach provides a robust solution for predicting, classifying, and characterizing phage tail -bers, o ering insights into

Sep 08, 2025

Harmonized Tariff Schedule

The Harmonized Tariff Schedule provides detailed tariff rates and statistical categories for merchandise imported into the United States.

Nov 07, 2025

Fiber Color Code: Complete Guide to Mastering Identification

Understand fiber color codes and their meanings in this comprehensive guide. Learn more about outer fiber jacket

Apr 21, 2026

RBPseg/README.md at main · VKleinSousa/RBPseg · GitHub

RBPseg: A Tool for Tail Fiber Structure Prediction Table of Contents About Installation Requirements Usage Examples Example 1:

Apr 28, 2026

Towards a complete phage tail fiber structure atlas | bioRxiv

Our findings suggest the existence of modular fibers as well as fibers with different sequences and shared structure,

Apr 29, 2026

RBPseg: Toward a complete phage tail fiber structure atlas

© 2026 Khanimambo Critical Industry Optical Networks - All rights reserved

Using this approach, we generated complete tail fiber models, validated by single-particle cryo–electron microscopy of

Nov 22, 2025

RBPseg: Toward a complete phage tail fiber structure atlas

A structural classification of 67 fibers identified 16 distinct classes and 89 domains, revealing patterns of modularity,

Aug 07, 2025

Towards a complete phage tail fiber structure atlas

The TC classes and its members (part 1) colored based on sequence 728 conservation. The sequence conservation of each TC

Apr 22, 2026

RBPseg: A Tool for Tail Fiber Structure Prediction

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

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: https://khanimamboguesthouse.co.za
Email: sales@khanimamboguesthouse.co.za
Phone: +27 64 852 1973
Address: Unit 7, Greenway Business Park, 8 Innovation Drive, Centurion, 0157, South Africa

This document is for informational purposes only. Specifications subject to change without notice.

© 2026 Khanimambo Critical Industry Optical Networks - All rights reserved