

PHAGE-LIKE PARTICLES (PLPs)

Engineered RNA Controls for Modern Molecular Diagnostics

CONFIDENCE ACROSS EVERY STEP OF RNA-BASED TESTING

Molecular assays demand controls that perform reliably across increasingly complex workflows. ZeptoMetrix® Phage-Like Particle (PLP) technology delivers safe, stable, and quantifiable RNA controls designed to support assay development, validation, and long-term performance.

WHAT ARE PLPs?

Phage-like particles (PLPs) are synthetic, non-infectious particles engineered to encapsulate custom RNA sequences (up to ~1,400 bases) within a protective protein coat, offering safety, stability, and consistency across lots. PLPs are quantifiable by dPCR or RT-qPCR.

HOW PLP TECHNOLOGY WORKS

ZeptoMetrix PLPs are produced using controlled recombinant and purification protocols optimized for accuracy and consistency. The resulting protected RNA control performs reliably across molecular and process workflows.

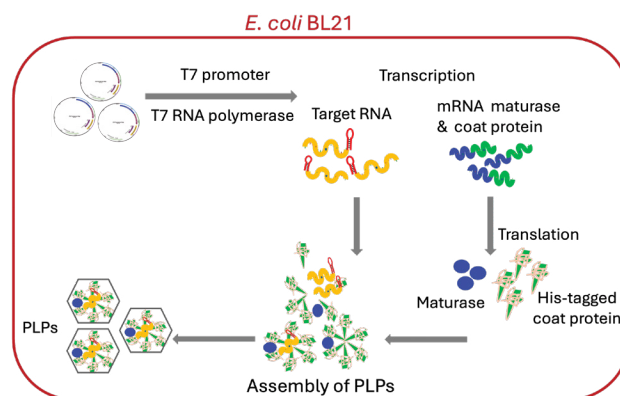
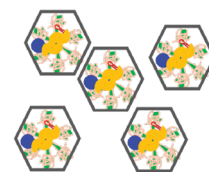
This enables:

- ✓ Custom RNA target design
- ✓ Assembly within a phage-derived protein coat
- ✓ Enzymatic removal of unprotected nucleic acids
- ✓ Analytical validation

CUSTOMIZATION AND SCALE — BUILT IN

ZeptoMetrix partners directly with assay developers to:

- ✓ Design custom RNA targets
- ✓ Optimize concentration and format
- ✓ Support development, validation, and manufacturing
- ✓ Scale production under rigorous quality systems



EXTRACTION AND PROCESS CONTROLS

PLPs facilitate verification of every step of the workflow.

- ✓ Detect extraction inefficiency or enzyme inhibition
- ✓ Prevent false negatives via process integration verification
- ✓ Enable ISO 15189-compliant QC documentation
- ✓ Compatible with RT-PCR, dPCR, and NGS workflows

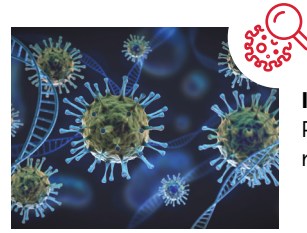
WHY ASSAY DEVELOPERS CHOOSE PLPs

PLP technology addresses common challenges in molecular assay workflows.

Features:

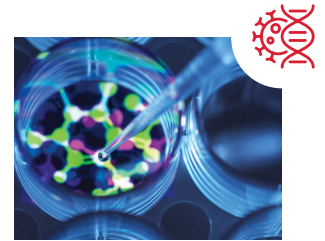
- ✓ Leakproof design
- ✓ High stability
- ✓ Uniform performance
- ✓ Customizable
- ✓ Non-infectious
- ✓ Purity

APPLICATIONS ACROSS MOLECULAR DIAGNOSTICS

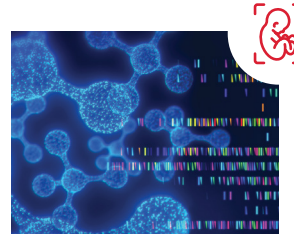


Infectious Disease Diagnostics
Process controls for a broad range of RNA-based pathogens

Oncology and Precision Medicine
cfRNA standards, transcriptomics (e.g., KRAS, EGFR, ALK) in liquid and solid biopsy material



Prenatal and Genetic Testing
cfRNA mimics for PLAC4, β -actin, trisomy 21 markers in maternal blood



NGS and Transcriptomics
Traceable, quantitative surrogates for RNA-seq, cfRNA-seq, and metatranscriptomics



YOUR PARTNER IN RNA CONTROL SOLUTIONS

Our scientists collaborate closely with you to deliver control solutions and support your next generation of RNA-based assays and applications.

Discover how ZeptoMetrix Phage-Like Particle technology can support your next generation of RNA-based assays by visiting zeptometrix.com or contacting us today.



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