

TaqMan® Assays Ambient Shipping



Green Benefits

- No dry ice
- No expanded polystyrene (EPS) coolers
- No energy expended to produce coolers
- Decreased fuel consumption and greenhouse gas emissions for transport
- Less waste disposal

Introduction

In order to minimize the adverse environmental impact of packaging and shipping products on dry ice, Life Technologies Corporation investigated the feasibility of shipping its Applied Biosystems® TaqMan® Assay Products at ambient temperature. Functional and stability testing demonstrates that ambient shipped assays provided the same quality as assays shipped on dry ice. By these actions, we are decreasing packaging and dry ice, thereby reducing energy, fuel use, greenhouse gas emissions, and waste at end-of-life.

Product Description

Applied Biosystems® TaqMan® Assays are the most comprehensive set of products available for gene expression, miRNA, copy number variation, and single nucleotide polymorphism (SNP) genotyping analysis. They include off-the-shelf, gene-specific probe and primer sets, custom probes and primers manufactured to your desired sequences, and everything in between. All TaqMan® Assays have been designed using our validated bioinformatics pipeline and run with the same PCR protocol, eliminating the need for primer design or PCR optimization. TaqMan® Assays provide a fast, reliable, and convenient method for generating reproducible results for your research.

Green Features

Sustainable Packaging

Life Technologies has been systematically evaluating novel ways to minimize the impact of shipping product on dry ice, and the carbon dioxide (CO₂) footprint left by these products during distribution. One way we can do this is to ship TaqMan® Assay products at a temperature consistent with their demonstrated stability. The adverse environmental impact of shipping frozen products is tremendous: from manufacturing coolers to the addition of dry ice to transport—all contribute to CO₂ emissions.

The annual carbon footprint to manufacture EPS and convert it into coolers for our oligonucleotide products is approximately 100 tons. It takes nearly 300 barrels of crude oil equivalents and 400 MWh of power annually to make the EPS coolers needed to ship Life Technologies genomic assay products¹.

An average of 7 pounds of dry ice is added to each cooler to ensure the product is delivered frozen to our customers, further increasing the mass and dimension of each package. Factoring in the number of shipments and average distance traveled per package and the fact that most packages are shipped via air, the annual total carbon footprint for transporting frozen oligonucleotides is in excess of 100 tons (measured as CO₂ emissions)².

By “going ambient” for the oligo assays, Life Technologies would help divert an annual total of nearly 26,000 kg (70,000 ft³) of EPS from landfills and incinerators, and would reduce the total carbon footprint from transport by over 200 tons annually².

Functional and stability testing demonstrated that TaqMan® Assays exposed to simulated ambient shipping conditions performed identically as assays shipped on dry ice. Further details can be found at www.appliedbiosystems.com/ecotaqman or www.invitrogen.com/ecotaqman.

TaqMan® Assay Products

- TaqMan® Gene Expression Assays
- Custom TaqMan® Gene Expression Assays
- TaqMan® MicroRNA Assays
- TaqMan® SNP Genotyping Assays
- Custom TaqMan® SNP Genotyping Assays
- TaqMan® Drug Metabolism Genotyping Assays
- TaqMan® Non-coding RNA Assays
- TaqMan® Pri-miRNA Assays
- TaqMan® PreAmp Pools
- TaqMan® Megaplex™ Primer Pools
- TaqMan® Copy Number Assays
- Custom TaqMan® Copy Number Assays

Footnotes

1. Data produced using Compass™ Comparative Packaging Assessment online software tool (v. 1.1) (<https://www.design-compass.org/>).
2. Reference data derived from U.S. EPA, Climate Leaders, Greenhouse Gas Inventory Protocol Core Module Guidance (*Optional Emissions from Commuting, Business Travel and Product Transport*).

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