HUMAN HEALTH | ENVIRONMENTAL HEALTH

PerkinElmer, Inc.
DNA Sequencing and Analysis Services
29 Business Park Drive
Branford, CT 06405
USA

Phone 877-737-5468
Fax 203-433-3253
www.perkinelmer.com

PerkinElmer Sample Preparation and Shipping Guidelines

All customers must submit a completed Sample Manifest with all samples shipped to PerkinElmer's DNA Sequencing and Analysis Services

SAMPLE REQUIREMENTS

Incoming Genomic DNA for Library Construction

PerkinElmer will assess the quality and quantity of each individual sample submitted for sequencing. If the sample does not meet our guidelines we will notify the customer.

DNA Quality: DNA should be of high quality and sufficient purity to provide A_{260}/A_{280} of ≥ 1.8, to yield ideal results. One µL of each DNA sample being shipped should be analyzed using a 1% agarose gel, containing a 1 Kb reference ladder, to evaluate concentration and quality. An image of the agarose gel should be included with each lane labeled clearly.

DNA Quantity: The amount of gDNA required will depend on the type of NGS library being prepared. PerkinElmer recommends the use of Qubit or PicoGreen fluorometry when determining the quantity of each sample.

- **For Agilent SureSelect^{XT} Library Preparation:** Incoming gDNA samples must contain at least 5 µg of product per sample at a concentration of ≥ 30 ng/µL in molecular biology grade water or TE buffer.

- **For TruSeq DNA Library Preparation:** Incoming gDNA or cDNA samples must contain at least 2 µg of product per sample at a concentration of ≥ 20 ng/µL in molecular biology grade water or TE buffer.

- **For TruSeq Custom Amplicon Library Preparation:** Incoming gDNA samples must contain at least 500 ng of product at a concentration of ≥ 50 ng/µL in molecular biology grade water or TE buffer.

Any unused DNA samples can be returned or destroyed. Please indicate preference on the sample manifest and remember to include a FedEx account number if the return option is selected. If no preference is indicated samples will be destroyed after data delivery. Customers who do not use FedEx will have to make return shipping arrangements with their sales representative.

Customer Prepared Libraries being Submitted for Targeted Enrichment and Sequencing

Library Format:
Agilent SureSelect: Prepared libraries submitted for enrichment should contain a minimum of 1 µg of DNA in a volume of 30 µL of molecular biology grade water. The purified library should also be evaluated on an Agilent Bioanalyzer, or on a PerkinElmer LabChip GX using an appropriate assay. The electropherogram should show a peak around 250 – 275 bp. Please submit a printout of the library trace(s) with the sample(s).

Customer Prepared Libraries Submitted for Sequencing

Libraries ready for Cluster Generation: Prepared libraries must be submitted at a concentration of ≥ 10 nM in a minimum volume of 30 µL. Libraries should also be evaluated on an Agilent Bioanalyzer or on a PerkinElmer LabChip GX using an appropriate assay. Please submit a printout of the library trace(s) with the sample(s).

Illumina Nextera XT: Libraries should be submitted as a Pooled Amplicon Library (PAL) and be prepared in accordance to the workflow provided in the Nextera XT Sample Prep Guide that may be downloaded from the Illumina website:
http://support.illumina.com/sequencing/sequencing_kits/nextera_xt_dna_kit/documentation.ilmn. In addition to submitting the PAL, please also submit your sample sheet created in Illumina Experiment Manager (IEM). For amplicon applications, please also submit the manifest file.
Illumina Experiment Manager may be downloaded from the Illumina website at:
http://support.illumina.com/sequencing/sequencing_software/experiment_manager.ilmn

SAMPLE PREPARATION FOR SHIPMENT

For ≤ 12 individual samples, the samples should be submitted in 1.7 mL microcentrifuge tubes. The side of each tube must be labeled with the sample name. Attach the barcode label supplied by PerkinElmer on a dry 1.7 mL tube that is at room temperature (to facilitate adhesion), as shown below in Figure 1.

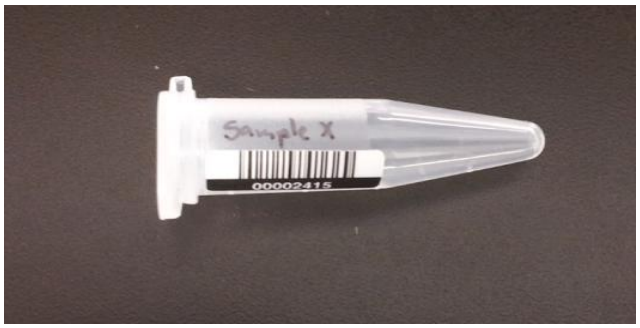

Figure 1. Necessary barcode label placement on a 1.7 mL microcentrifuge tube containing sample *DNA.*

If shipping more than one sample, up to six samples can be placed in a 50 mL disposable conical tube for shipping. In order to prevent evaporation or a sample opening in transit, we recommend sealing the tops of each 1.7 mL microcentrifuge tube with parafilm. Also, please pack the 50 mL conical tube with paper towel or tissue paper to prevent movement of the samples during shipping, as shown below in Figure 2. The 50 mL tube must be labeled with the name of the institution, the name of the person that the quote was issued to, and the quote number using a permanent marker.

Figure 2. Preparation of multiple (up to six) 1.7 mL microcentrifuge tubes for shipping.

For ≥ 12 individual samples, the samples must be submitted in a 96 well plate. The barcode label supplied by PerkinElmer should be placed on the left hand side of the plate, as shown in Figure 3 on a dry plate that is at room temperature (to facilitate adhesion). When samples are loaded into the plate, they should be arranged in columns (A1-H1, A2-H2, etc.). Subsequently, seal the plate using a plate seal (*e.g.* Nunc 276014 or equivalent) and label the plate seal with the name of the institution, the name of the person that the quote was issued to, and the quote number using a permanent marker. Freeze the plate prior to preparing it for shipment.

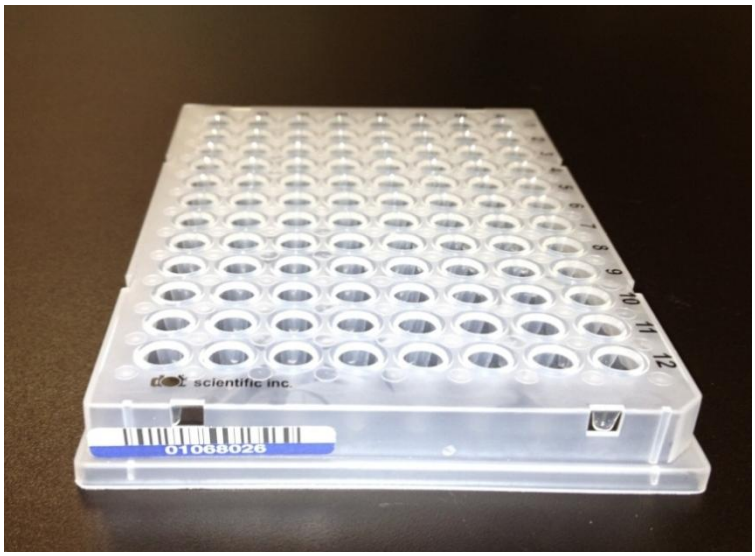

Figure 3. Barcode label placement on a 96-well plate containing sample DNA

Submitting Clustered Illumina Flow Cells for Sequencing

When preparing clustered flow cells for shipping, make sure the 50 mL storage tube contains the maximum volume of buffer possible. Label the side of the storage tube with the name of the institution, the name of the person that the quote was issued to, and the quote number using a permanent marker. Finally, seal the screw cap of the 50 mL tube with parafilm and wrap the tube with multiple layers of bubble wrap to help insulate from the cold source during shipping. If relevant, the following must be submitted with clustered flow cells:

- Custom sequencing primers @ 100 μM (Read 1 and/or Read 2)
- TruSeq Multiplex Sequencing Primer Box
- TruSeq PE Cluster Kit (box 1 of 2)

SAMPLE SHIPPING

All DNA samples should be submitted frozen and shipped on dry ice. To ensure the integrity of the samples, we recommend placing tubes or plates inside of individual plastic bags prior to placing on dry ice.

Clustered flow cells must be shipped at 4°C in an insulated container using gel packs. **Do Not Ship On Dry Ice.** The TruSeq Multiplex Sequencing Primer box and the TruSeq PE cluster Kit (box 1 of 2) should be submitted frozen and shipped on dry ice.

Please include a copy of the quotation and the sample manifest with your shipment.

Ship samples by a next day shipping carrier to:

PerkinElmer, Inc.
DNA Sequencing and Analysis Services
29 Business Park Dr
Branford, CT 06405
Phone: +1-877-737-5468

Please email the sample manifest and shipment tracking information to: SeqProject@perkinelmer.com.

Please do not ship samples for weekend or holiday delivery.