

**105.8 - DNA Profiling and Nucleic Acid Materials, and Monoclonal Antibody**

Standard Reference Material (SRM) 2372a is intended primarily for use in the value assignment of human genomic deoxyribonucleic acid (DNA) forensic quantitation materials. SRM 2372a consists of three well-characterized human genomic DNA materials in pH 8.0 aqueous buffer. The components are derived from human buffy coat samples and labeled A, B, and C. Component A consists of genomic DNA from a single male donor. Component B consists of genomic DNA from a single female donor. Component C consists of a gravimetric mixture of genomic DNA (1 part male donor to 3 parts female donor). SRM 2372a is certified for copy number and DNA concentration (ng/ $\mu$ L). A unit of the SRM consists of one sterile 0.5 mL vial of each component, each vial containing approximately 55  $\mu$ L of DNA solution. Each of these vials is labeled and is sealed with a color-coded screw cap.

SRM 2374 is intended for use as a template for ribonucleic acid (RNA) control synthesis using in vitro transcription (IVT). These RNA controls are designed to be used as external, or "spike-in", controls to support confidence in gene expression assays by providing quantitative assessment of the technical performance of a gene expression measurement. A unit of the SRM contains 96 different 0.5 mL polypropylene tubes, with approximately 10  $\mu$ g of dehydrated plasmid deoxyribonucleic acid (DNA) in each tube. Depending on the strand transcribed, the controls will mimic either "sense" or "anti-sense" eukaryotic messenger RNA (mRNA).

SRM 2392 is intended to provide quality control when performing the polymerase chain reaction (PCR) and sequencing of human mitochondrial DNA (mtDNA) for forensic identifications, medical diagnosis, or mutation detection. It may also be used as a control when amplifying (PCR) and sequencing any DNA. SRM 2392 Mitochondrial DNA Sequencing contains DNA extracted from two cell lines plus cloned DNA from a region that is difficult to sequence. The certificate accompanying the SRM details the base pair sequences of the DNA, and the sequences of 58 unique primer sets which permit the amplification and sequencing of any specific area of the entire human mitochondrial DNA (strand). SRM 2392 consists of three frozen components packaged in one box. For further information see: [SRM 2392](#).

SRM 2392-I Mitochondrial DNA Sequencing complements and adds another DNA template to SRM 2392 for the amplification and sequencing of human mtDNA. The selection of the HL-60 cell culture line for this additional DNA template was based on a suggestion from the Federal Bureau of Investigation (FBI) that this DNA would be particularly useful to the forensic community. For further information see: [SRM 2392-I](#).

RM 8366, 8375, 8391, 8392, 8393, and 8398 are intended for assessing performance of human genome sequencing, including whole genome sequencing, whole exome sequencing, and more targeted sequencing such as gene panels. Specifically, the material can be used to obtain estimates of true positives, false positives, true negatives, and false negatives for variant calls.

RM 8671 is intended primarily for use in evaluating the performance of methods for determining physicochemical and biophysical attributes of monoclonal antibodies. It also provides a representative test molecule for development of novel technology for therapeutic protein characterization.

| SRM         | Description  | Unit of Issue             |
|-------------|--|---------------------------|
| 2365        | BK Virus DNA Quantitative Standard   | 1 vial x 110 $\mu$ L      |
| 2366a       | Cytomegalovirus DNA (Towne $\Delta$ 147 BAC) for DNA Measurements  | 1 vial x 150 $\mu$ L      |
| 2372a       | Human DNA Quantitation Standard  | 3 vials x 55 $\mu$ L      |
| 2373        | Genomic DNA Standards for <i>HER2</i> Measurements   | 5 vials, 1 each level     |
| 2374        | DNA Sequence Library for External RNA Controls   | 96 tubes                  |
| 2391d       | PCR-Based DNA Profiling Standard   | 5 vials                   |
| 2392        | Mitochondrial DNA Sequencing (Human)   | set (3)                   |
| 2392-I      | Mitochondrial DNA Sequencing (Human HL-60 DNA)   | each                      |
| 2393        | CAG Repeat Length Mutation in Huntington's Disease   | set (6)                   |
| 2396        | Oxidative DNA Damage Mass Spectrometry Standards   | set (10)                  |
| 8366        | <i>EGFR</i> and <i>MET</i> Gene Copy Number Standards for Cancer Measurements  | 6 vials, 100 $\mu$ L each |
| 8375        | Microbial Genomic DNA Standards for Sequencing Performance Assessment (MG-001, MG-002, MG-003, MG-004)                             | 4 vials, 1 each           |
| 8391        | Human DNA for Whole-Genome Variant Assessment (Son of Eastern European Ashkenazi Jewish Ancestry) (HG-002)                         | 1 vial                    |
| 8391(QTY10) | Human DNA for Whole-Genome Variant Assessment (Son of Eastern European Ashkenazi Jewish Ancestry) (HG-002)                         | 10 vials of RM 8391       |
| 8392        | Human DNA for Whole-Genome Variant Assessment (Family Trio of Eastern European Ashkenazi Jewish Ancestry) (HG-002, HG-003, HG-004) | 3 vials, 1 each           |
| 8393        | Human DNA for Whole-Genome Variant Assessment (Son of Chinese Ancestry) (HG-005)   | 1 vial                    |
| 8393(QTY10) | Human DNA for Whole-Genome Variant Assessment (Son of Chinese Ancestry) (HG-005)   | 10 vials of RM 8393       |
| 8398        | Human DNA for Whole-Genome Variant Assessment (Daughter of Utah/European Ancestry)(HG-001)   | 1 vial                    |
| 8398(QTY10) | Human DNA for Whole-Genome Variant Assessment (Daughter of Utah/European Ancestry) (HG-001)  | 10 vials of RM 8398       |
| 8671        | NISTmAb, Humanized IgG1 $\kappa$ Monoclonal Antibody   | 1 vial x 800 $\mu$ L      |

- Certified values are normal font
- Reference values are italicized
- Values in parentheses are for information only