SAMPLE QUALITY ASSESSMENT

Real-time PCR assays

Internal Quality Control Assay

DNA Fragmentation Quantification Assay

Library Quantification Kit for Illumina®

EntroGen

Predictive • Preventive • Personalized

SAMPLE QUALITY ASSESSMENT

SAMPLE QUALITY IN MOLECULAR DIAGNOSTICS

The accuracy of qPCR and NGS data depends on the quality of the sample. However, DNA extracted from formalin-fixed paraffin-embedded (FFPE) samples may be highly fragmented and contain PCR inhibitors. These factors compromise the sample quality, decrease the quantity of amplifiable DNA, and interfere with PCR amplification. In addition, fragmented DNA reduces the conversion rate of input DNA into adaptor-ligated libraries for downstream sequencing. Traditional methods of quantifying samples using fluorometer-based systems do not detect the presence of PCR inhibitors or measure the amount of amplifiable DNA and properly adaptor-ligated library molecules. Therefore, sample input based on such methods can lead to poor sample representation in qPCR and NGS assays which results in unreliable data, low quality scores in NGS, and patient sample reruns.

Real-time PCR is the most accurate method of quantifying and qualifying both DNA and library inputs for downstream qPCR and NGS assays. Primers designed to bind to reference genes or P5 and P7 adaptor oligos allow for the detection of only amplifiable DNA and properly adaptor-ligated molecules, respectively. Determining sample input by real-time PCR for downstream qPCR and NGS assays will save time, reagents, and patient samples by lowering the probability of inconclusive results and sample reruns.

AVAILABLE KITS FOR SAMPLE QUALITY

PRODUCT NAME	CAT NO.	INTENDED USE
Internal Quality Control Assay	IQCA-RT50	RUO, CE-IVD
DNA Fragmentation Quantification Assay	FQA-RT40	RUO, CE-IVD
Library Quantification Kit for Illumina®	LIBQ-NGS	RUO, CE-IVD

EntroGen's Sample Quality Assessment kits provide reagents, positive controls, and standards (if applicable) to detect and quantify the amplifiable DNA extracted from patient samples or adaptor-indexed libraries intended for downstream qPCR and NGS assays, respectively.

- Internal Quality Control Assay (IQCA): 50 sample tests †
- DNA Fragmentation Quantification Assay (FQA): 40 sample tests †
- Library Quantification Kit for Illumina® (LIBQ): 108 sample tests †

The assessment procedure involves three simple steps:

1) Isolation of DNA from FFPE sections or sequencing libraries.
2) Amplification using the provided reagents in the sample quality assessment kit.
3) Data analysis and interpretation using the real-time PCR software or provided analysis worksheet.*

† Maximum number of sample tests; number excludes controls and standards (if applicable).
* Automated analysis worksheets available for certain kits and instruments; please contact support@entrogen.com for more information.

EQUIPMENT AND MATERIALS

EntroGen's Sample Quality Assessment kits require a real-time PCR instrument capable of detecting FAM and VIC. They do not include reagents for DNA isolation, library preparation, or library clean up.

Rev 04252017