



Automating QIAseq® FastSelect™ RNA Library Kit on firefly®

Introduction

The QIAseq® FastSelect™ RNA Library kits enable 1 day, sample-to-sequencer next-generation sequencing (NGS) library prep using Illumina® NGS instruments. This RNA library kit features cDNA barcoding and several different workflows, which enable either complete transcription of RNA molecules or 3' RNA-seq, simply by varying the primer in the reverse transcription reaction. We have successfully automated the simple and fast QIAseq FastSelect RNA Library workflow on SPT Labtech's [firefly®](#) liquid handling platform to generate Illumina®-compatible sequencing libraries. firefly has been designed specifically to streamline NGS library preparation by bringing together multiple liquid handling capabilities on a compact footprint.

Workflow overview



*firefly Run Time | **Thermocycler Run Time (min)

Figure 1. Overview of the steps performed by firefly to automate QIAseq® FastSelect™ RNA Library Kit including HMR RNA removal with run times for firefly and the thermocycler. RNA input: 100 ng.

Protocol performance

QC Data QIAseq® FastSelect™ RNA Library Kit

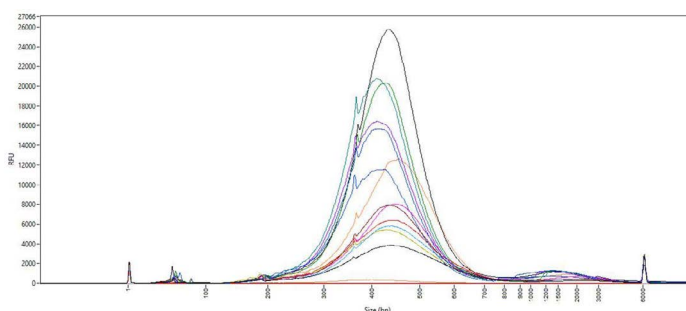


Figure 2. Fragment size distribution of the QIAseq® FastSelect™ RNA libraries analysed using the Fragment Analyzer. RNA input concentration 100 ng.

	ng/μL	nmole/L	Avg. Size (bp)
Average all samples	13.06	51.52	401
All samples %CV	70.82	71.64	12.90

Table 1. Average concentration (ng/μL and nmole/L) and size (bp) of the final libraries shown in Figure 2.

Conclusion

The automated workflow of the QIAseq FastSelect RNA Library Kit combined with firefly enable reproducible RNA library preparation, with performance metrics demonstrating robust library yields, reduced hands-on time and less user interventions.

