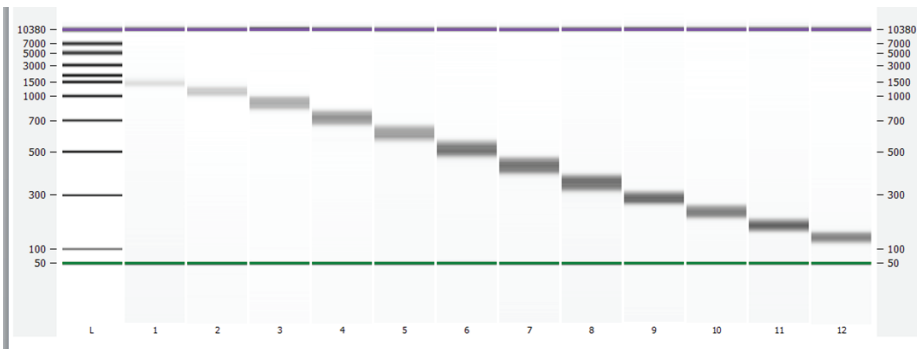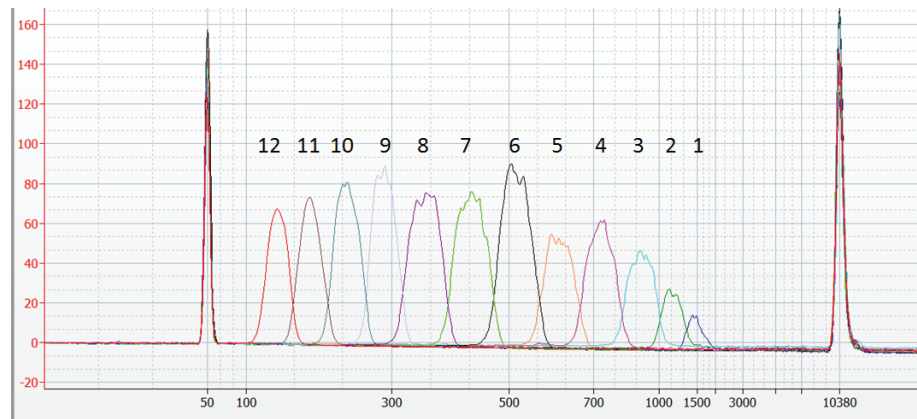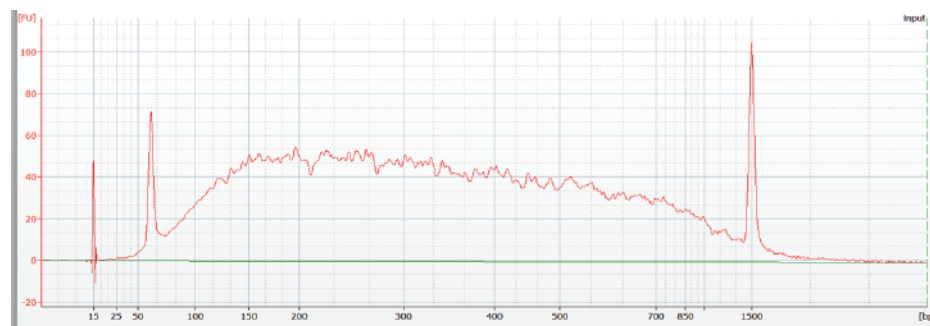## Analysis of Size fractions

Virtual Gel

DNA Fractions

Input DNA

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SageELF™ Control DNA

For Testing and Validation of DNA Fractionation on the SageELF Platform

use with:

2% Agarose Gel Cassettes
DNA fractionation between 100 bp -2300 bp

Product No.:	CDE2004
Cassette Description:	20 - 2% Agarose
Cassette Definition:	2% 100 bp - 2300 kb

sage science

About This Product

Every SageELF instrument is validated at Sage Science prior to shipment. As part of this procedure, DNA is fractionated using the agarose gel cassettes that are available to customers. Enzyme digested e.coli that has been prepared to span the specified fractionation range for each cassette is used. The DNA that has been provided with this product is the same sample used for these validations.

Genomic E.coli DNA is digested using HinfI/MspI restriction enzymes and purified using phenol:chloroform extraction, dialyzed and diluted into TE.

What Is Enclosed

Product number CDE2004 consists of 1 tube containing 180ul of DNA in TE. The DNA concentration is 5ug/30ul, which is the maximum input amount per load. This is sufficient to run at least 4 cassettes, with 60ul of sample remaining. To use this product, users must have the ELD2010 cassette kit, and use the reagents provided with the kit (add 10ul of loading solution/internal standard mix per sample load).

How To Use The Control DNA

1. Carefully follow the cassette preparation instructions outlined in the SageELF operations manual or Quick Guide.

2. Bring the loading solution/marker-mix provided with the ELD2010 cassette kit to room temperature.

3. Combine the 30µl DNA sample with 10µl of loading solution/marker-mix. The total sample volume is 40µl.

4. Mix the samples thoroughly (vortex mixer). Briefly centrifuge to collect.

5. Load the sample onto the cassette following the instructions outlined in the SageELF operations manual or Quick Guide.

6. Select the "2% 100 - 2300bp" cassette definition in the software protocol editor.

7. Program a size-based fractionation protocol with an 500kb collection target in well number 6. Initiate the Run.

A Correctly Programmed Protocol
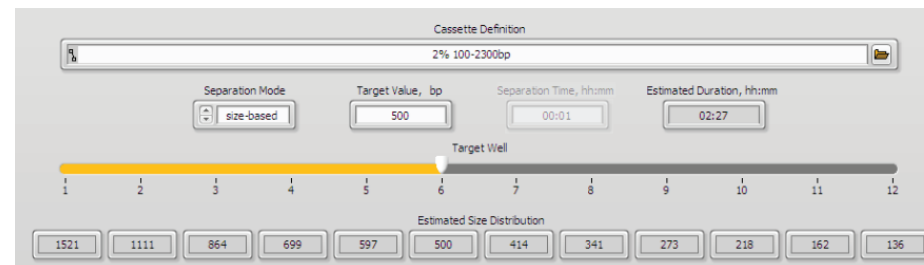
Analysis of Size fractions

The Agilent 2100 Bioanalyzer was used to analyze fragment sizes using their 7500 chip.

The fraction sizes should be within +/- 15% of the target Typical results are summarize in the table below, and the virtual gel image and traces are shown on the next page.

Well Number	From [bp]	To [bp]	Average Size (bp)	Programmed Target (bp)	Variance
1	1,159	2,572	1521	1,540	1%
2	916	1,770	1111	1,175	6%
3	767	1,369	864	919	6%
4	608	895	699	736	5%
5	514	743	597	617	3%
6	434	608	500	518	4%
7	347	507	414	435	5%
8	269	421	341	356	4%
9	217	347	273	290	6%
10	189	288	218	238	9%
11	145	231	162	184	14%
12	93	187	136	143	5%