www.sagescience.com

SageELF™

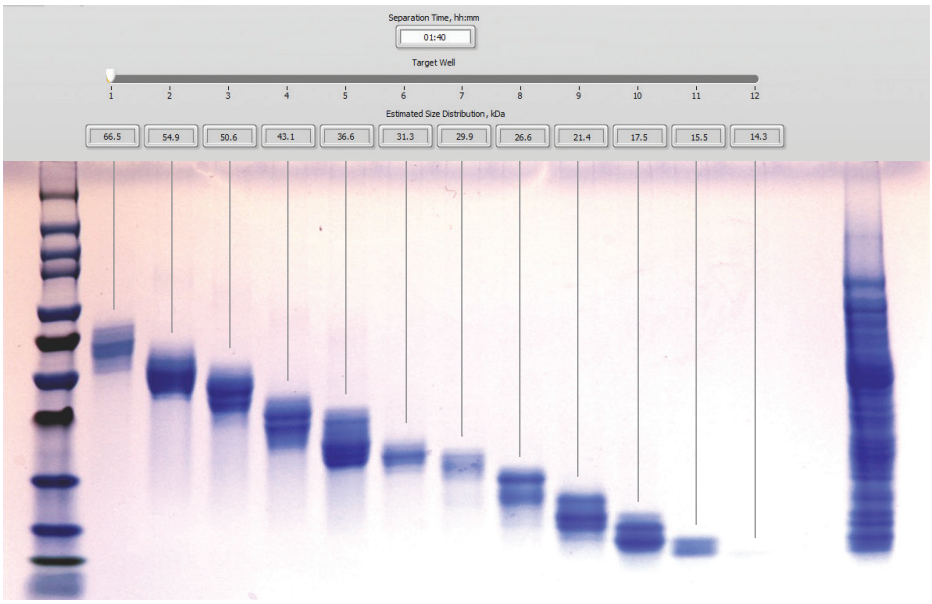
Protein Size Fractionation for Mass Spectrometry

sage science

ELF: Electrophoretic Lateral Fractionation

The SageELF is a novel tool for fractionating protein samples for proteomics studies. Featuring a unique electrophoretic design, the platform slices your protein sample into 12 contiguous fractions and collects them in separate, buffer-filled sample wells. We've simplified the process to a few short steps: we provide the precast gel, software predicts the expected fractionation profile, and you load your sample. After 2-3 hours, simply collect your fractions in buffer using a pipette.

Adjust the run time, and the software estimates the fraction size distributions



The SageELF automatically collects 12 contiguous sample fractions (*E. coli* cell lysate)

Bottom Up, Top Down, or PTMs — a great alternative to in-gel digestion

The SageELF separates solubilized proteins by size, reducing sample complexity upstream of mass spec. One sample is loaded onto a gel cassette, and two cassettes may be run at once:

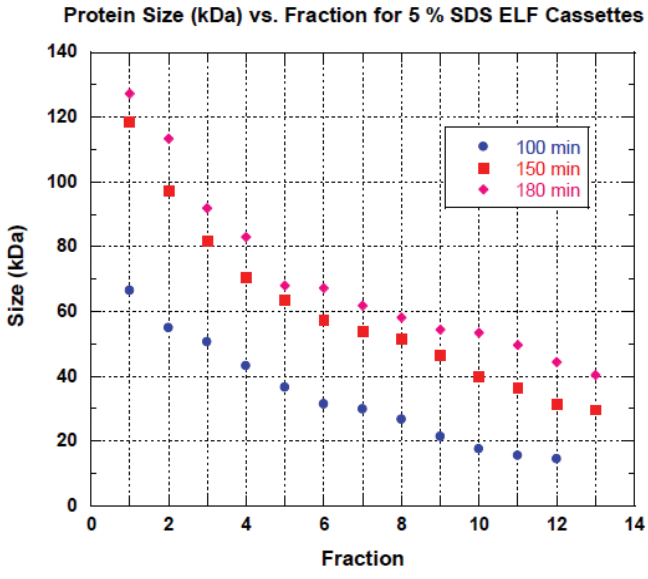
- Max input load: 350µg
- Input volume: 30µl
- Elution well vol: 30µl

Recommended fraction ranges:

- 5% SDS-Agarose for fractions 10-150 kDa
- 3% SDS-Agarose for fractions 10-300 kDa

Run times:

- Up to 3 hours



Fractionation ranges for a 5% agarose protein collections at three run times.

From the makers of the Pippin Prep

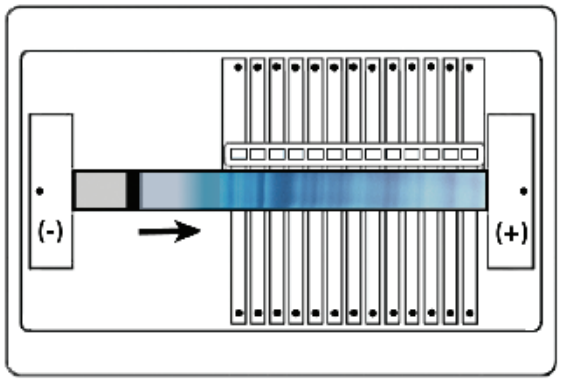
Leaders in DNA size selection

Our Technology

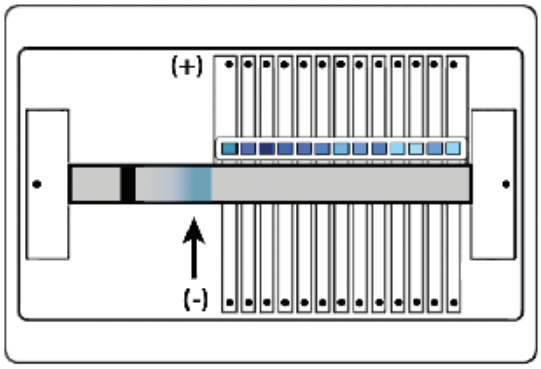
The SageELF gel cassette separates proteins along an agarose gel column, at the end of a user-programmed run time. As a second set of electrodes are activated, fractions are side-eluted into 12 membrane-bound wells. The cassette design includes a novel continuous buffering system which ensures the proteins do not diffuse away from the gel during separation, and that fractions are evenly collected during electro-elution.

Benefits:

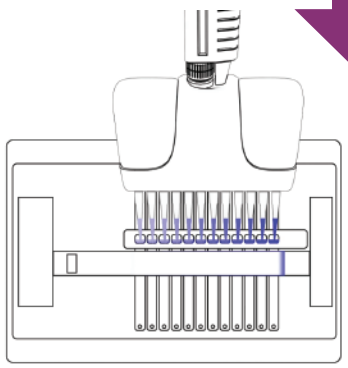
- Just minutes of hands-on time
- Automated fractionation completes in a few hours
- Flexible programming estimates fractionation ranges
- >50% protein recoveries
- Reproducible collections



Separate proteins in an agarose gel column

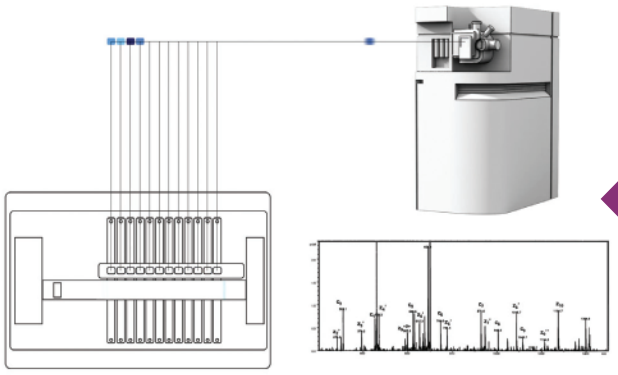


Fractionate into 12 membrane-bound wells



Remove fraction with a pipette

Remove SDS



Analyze by mass spec

Sample Fractionation Products for Mass Spec

Sage Science has developed two systems for automated preparative electrophoresis of protein samples. These products provide increased reproducibility and ease of use for procedures that require gel isolation of proteins, including top-down and bottom-up proteomics studies and targeted protein analysis for mass spectrometry.

In both systems, the user simply loads samples into precast gel cassettes, programs desired collection ranges into instrument software, and starts the run. At run completion, the user removes the eluted protein fraction(s) from membrane-bound wells within the cassette. The fractionated samples are recovered in SDS buffer — no gel extraction is required. Instrument software controls the timing of protein fractionation using input from on-board optical detection units, which monitor the progress of fluorescently labeled molecular weight markers during electrophoresis.

The systems provide the following fractionation strategies:

The BluePippin: Targeted Protein Collection

The BluePippin allows users to enter a kDa target or single size range, and collect the proteins in that range at the end of the run. The BluePippin protein cassettes are useful for collecting one targeted protein fraction from each sample (up to five samples per run).

The Sage ELF: Multi-fractionation of Protein Samples

The Sage ELF features a cassette system designed to fractionate a protein sample into 12 contiguous size fractions. Users load a single protein sample onto a gel cassette, set a range threshold in software, and the 12 fractions are simultaneously electro-eluted from a separation gel column.

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