OzScientific

Knowledge-driven Solutions for Dairy & Food Industries

Food Analysis Explained

Gel Electrophoresis

For protein composition in foods

In the food industry, SDS PAGE is often used to analyse foods rich in protein such dairy foods, plant proteins from soy and other legumes, and meat.

SDS Polyacrylamide Gel Electrophoresis – short SDS PAGE – is a method of separating proteins by their molecular size.

The method can help food technologist to

- check whether **food processing changes the protein profile**, for example
  - pasteurisation,
  - cooking or
  - fermentation cause changes to the protein profile that can be shown by SDS PAGE
- authenticate a food product or investigate **food adulteration**, for example
  - the species origin of raw minced meat can be checked, or whether a meat is Halal or not.
  - the adulteration in milk powders.
  - the substitution of milks in cheese products

How we work

- Commercial
- Confidential
- Agreed project scope
- Client oriented
- Understand timelines

Our facilities

- Pilot plant for small scale concept products
- Product development lab
- Food analysis lab
- Meeting room
- Cold rooms and incubators

Our clients

- Dairy companies
- Artisan food manufacturers and start ups
- Beverage companies with novel product or technology ideas
- Nutraceutical manufacturers
- Manufacturers of baked goods and breads
- Processors of proteins from dairy and plants

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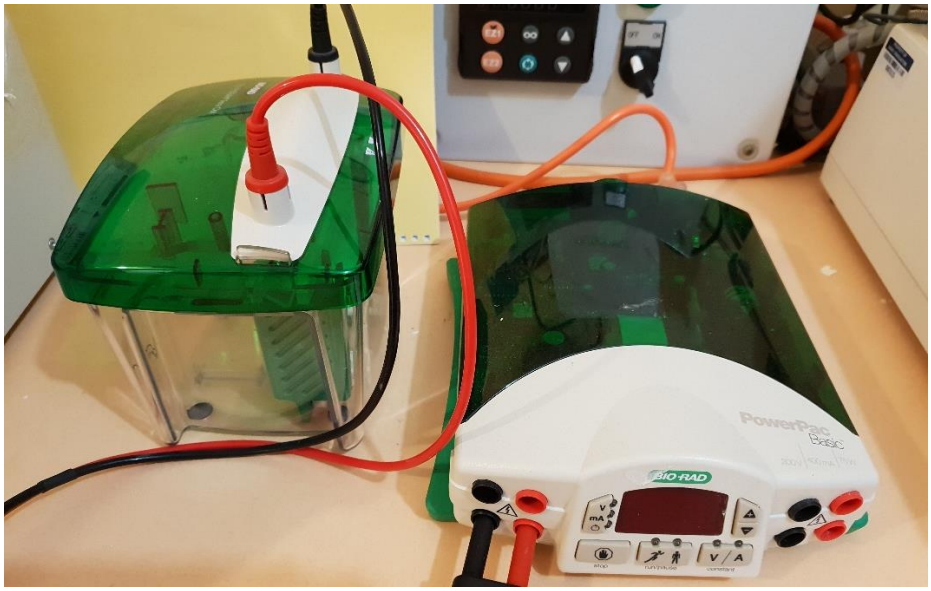
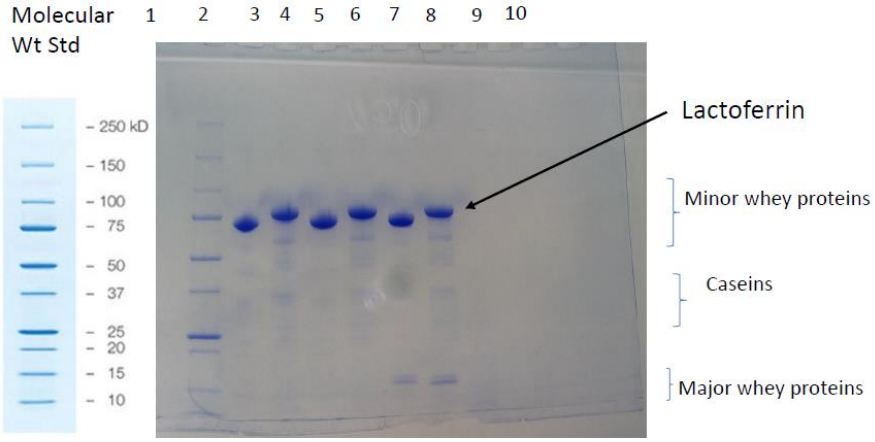


Gel Electrophoresis at OzScientific

Protein samples are applied to a gel, then the gel is placed into a small chamber filled with buffer. A current is applied to the gel using a power module and proteins are separated. Protein bands are stained with a blue dye.

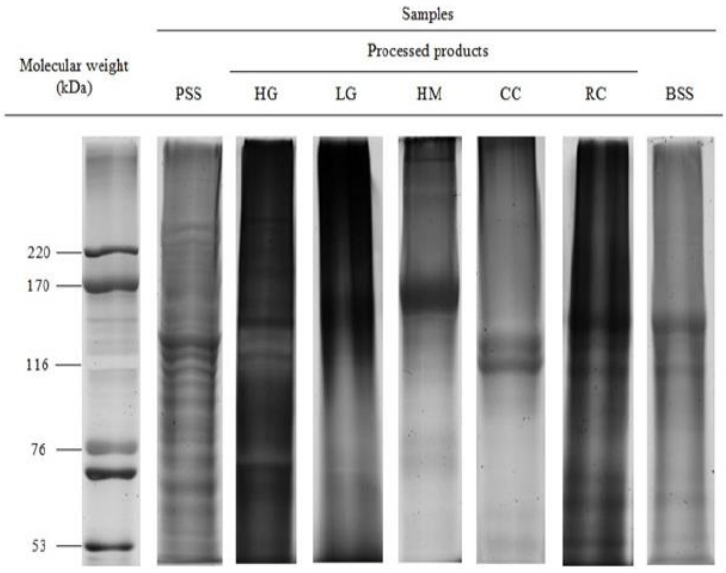
SDS PAGE is a faster and less costly than HPLC, but it is not as accurate and more difficult to use for quantitation.



Application Note

Separation of milk proteins

All proteins in cow's milk, eg the different caseins and whey proteins can be quickly separated with SDS PAGE.
In this application, we have checked lactoferrin powders for the presence of other milk proteins, such as caseins and major whey proteins.



Application Note

The origin of gelatine

In this project, the investigators compared the gelatin content from different sweets – marshmallows and fruit gummies – with the pattern of gelatine proteins and peptides found in beef and pork gelatine.
Published by Azira et al., 2012 in International Food Research Journal.

At OzScientific we have full access to food technology and scientific literature and can find the right applications for your query.