Protein Markers for IEF

IEF Gels and pI Determination

Due to its high resolving power while retaining the native state, IEF is preferably used for the characterization of complex protein mixtures, particularly, if their components are almost indistinguishable, for example the isoforms of certain enzymes. Here, using »ultrathin« slab gels (0.5 mm or thinner) extremely high resolution can be obtained.

In routine analysis, precast gels with carrier ampholytes or with immobilized pH-gradient are available to save time and effort and to provide reproducible, reliable results.

To determine the isoelectric points of unknown proteins the pH of focused bands may be measured on the gel using a surface electrode. Quite common is the pI-determination via coelectrophoresis of known protein marker mixtures. By simply comparing the position of unknown protein bands to the position of known marker proteins the pI-values can be interpolated quite accurately.

Benefits:

- Ready-to-use protein markers for Isoelectric Focusing
- One standard applicable to all IEF gels (vertical/horizontal)
- Purified protein components, salt-free
- 13 isoforms featuring characteristic pattern
- For determination of pI of unknown protein samples
- For monitoring the separation peformance of IEF gels

IEF Marker 3-10, Liquid Mix

Ready-to-use protein marker for isoelectric focusing. Contains 9 proteins pI 3.5 to 10.7 (13 isoforms).
Buffer composition: 0.01 % Bromophenol Blue (Na Salt), 0.01 % Methyl Red (Na Salt),
10 % Glycerol.

Amyloglucosidase	pI 3.5	Myoglobin horse	pI 6.9/7.35
Glucose oxidase	pI 4.2	Lentil lectin	pI 7.75/8.0/8.3
Trypsin inhibitor	pI 4.5	Ribonuclease A	pI 9.45
(beta)-Lactoglobulin	pI 5.15/5.3	Cytochrome C	pI 10.65
Carboanhydrase	pI 6.0		

Cat.-No.	Amount
39212.01	500 µl

Protein Test Mixture for pI-Determination, pH 3-10

pI-Marker proteins for pI determination by isoelectric focusing (IEF). Reconstitute dry powder with 1 ml water (concentration: 10 mg/ml).

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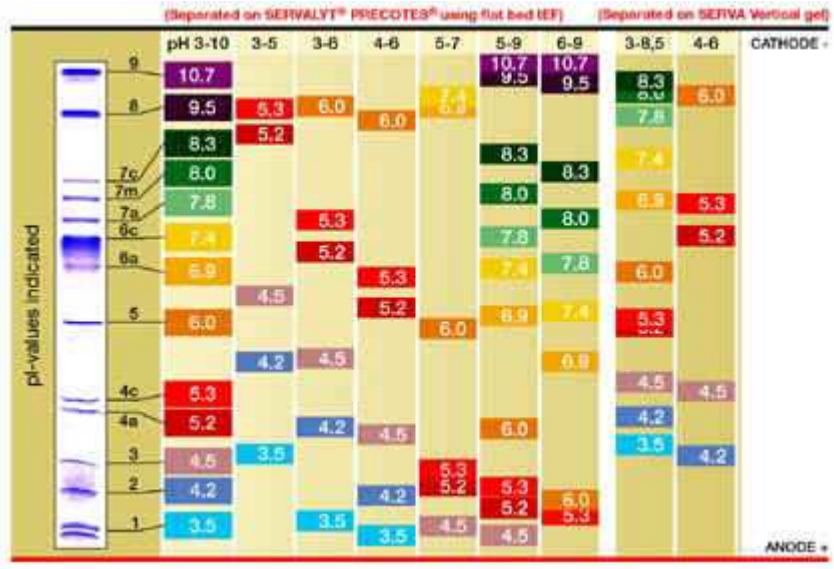
Carboanhydrase	pI 6.0		

Cat.No.	Amount
39211.01	10 mg

Schematic representation of marker bands in various pH fractions:



Protein (source)	PI[1)] of main band	No. (band)
Cytochrome C (horse, heart)	10.7	9
Ribonuclease A (bovine, pancreas)	9.5	8
Lectin (Lens culinaris)	8.3, 8.0, 7.8	7 c, m, a
Myoglobin (horse, muscle)	7.4, 6.9 [2)]	6 c, a
Carbonic anhydrase (bovine, erythrocytes)	6.0	5
ß-Lactoglobulin (bovine, milk)	5.3, 5.2	4 c, a
Trypsin inhibitor (soybean)	4.5	3
Glucose oxidase (Aspergillus niger)	4.2	2
Amyloglucosidase (Aspergillus niger)	3.5	1

1) Temperature = 5 °C. Please note that the pI is t emperature dependent, i.e.decreases as temperature increases (-0.005 ... 0.003 pH units per °C).
2) intensities of bands may vary