

HistoFast™ Prion Staining

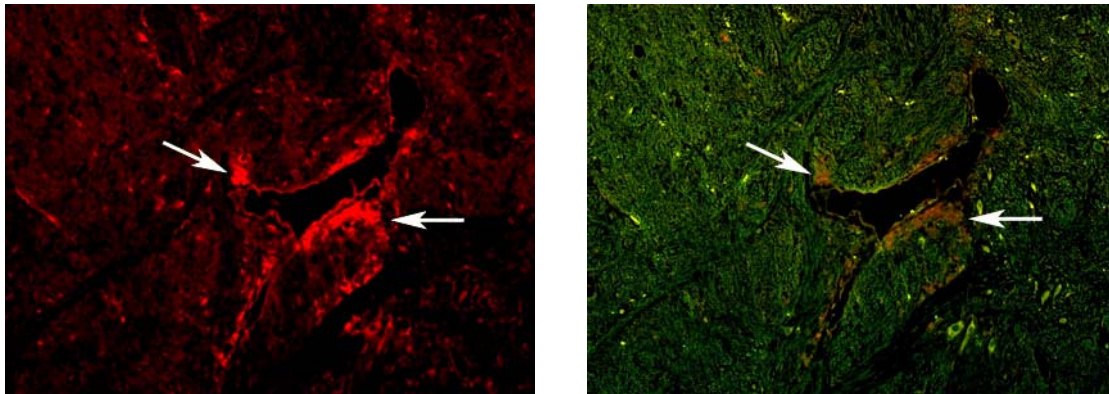
Staining of Prion deposits in tissue samples

HistoFast™ Prion Staining

BioChromix HistoFast™ Prion kit is excellent for histological staining of prion deposits in tissue samples. In vivo deposition of pathogenic prion protein (PrP^{Sc}) is a hallmark of diseases such as Scrapie (sheep), mad cow disease (cattle), and Creutzfeldt-Jacobs Disease (Human). Simple, sensitive and reliable tools that facilitate the correct detection, and thus diagnosis, of these deposits in tissue samples are of great importance. BioChromix markets a novel and superior method based on our patented optical Apolyon™ probes. The HistoFast™ kit is easy and fast to use and the evaluation of samples is clear even for an untrained eye. HistoFast™ provides the means for distinguishing even the smallest amyloid plaque.

How it works

The HistoFast™ Prion Staining probe is BCX106p gives highly specific PrP^{Sc} staining, strong fluorescence and the prion deposits are easily visualized with a fluorescence microscope. Stained prion deposits exhibit distinct fluorescence which makes analysis easy and minimize the risk of misinterpretation; even the smallest deposits are seen. De-paraffinized or frozen tissue samples are incubated in buffer for ten minutes, followed by incubation with BCX106p probe for 30 minutes. Very few wash steps are required and the samples are conveniently analyzed in a fluorescence microscope. By the appropriate use of filter sets various characteristics of the sample can be enhanced.



A Scrapie plaque in an Obex sample evaluated using fluorescence microscopy. Left: The PrP^{Sc} deposits exhibit a strong red fluorescence (Zeiss filter set 15). Right: The PrP^{Sc} plaque, clearly seen as orange/red deposits, overlaid on the surrounding tissue, exhibiting green fluorescence, to facilitate identification (Zeiss filter set 15 + filter set 9).

What it's used for

The HistoFast™ staining kit for pathogenic prion deposits can be used with either frozen or paraffin-embedded tissue samples. Tissue samples can be of various types, including brain, muscle, pancreas, etc. The probe will stain the prion deposits which are easily seen using a fluorescence microscope. One unit of BCX106p (1 mg) is enough for approximately 300 samples (mounted on glass slides), or even more if the samples are small (dots).

Advantages of BioChromix HistoFast™ Prion kit

BioChromix HistoFast™ Prion provides for fast, easy, robust analysis and does **not** require evaluation of birefringence, which reduces the risk of giving the wrong diagnosis. It is also possible to co-stain the samples with antibodies. Some of the advantages can be summarized in the following sentences:

- Specific to prion deposits in many types of tissue samples
- Very clear analysis and detection, which reduces the risk of wrong diagnosis
- Possible to remove background noise
- Possible to see background in different color, to facilitate identification of organ, navigation in sections and evaluation of surrounding tissue
- Co-staining with antibodies is possible

Requirements

Equipment: Fluorescence microscope

Material: Xylene, Alcohol (100 %, 95 %, 70 %), 100 mM Na-carbonate pH 10, PBS, Proteinase K

References

Representative scientific publications are listed below: Paper 1 explains the art of detection of prion protein deposits and strain discrimination, paper 2 more specifically with detection of Amyloid- β fibrils in Alzheimer's disease, and paper 3 with the subject detection of amyloidosis.

1. Christina J Sigurdson, K Peter R Nilsson, Simone Hornemann, Giuseppe Manco, Magdalini Polymenidou, Petra Schwarz, Mario Leclerc, Per Hammarström, Kurt Wüthrich & Adriano Aguzzi. *Prion strain discrimination using luminescent conjugated polymers*, Nature Methods (2007), **4(12)**,1023-1030.
2. K. Peter R. Nilsson, Per Hammarström, Fredrik Ahlgren, Anna Herland, Edrun A. Schnell, Mikael Lindgren, Gunilla T. Westermark, and Olle Inganäs. *Conjugated polyelectrolytes—conformation-sensitive optical probes for staining and characterization of amyloid deposits*, ChemBioChem (2006), **7**,1096–1104.
3. K. Peter R. Nilsson, Andreas Åslund, Ina Berg, Sofie Nyström, Peter Konradsson, Anna Herland, Olle Inganäs, Frantz Stabo-Eeg, Mikael Lindgren, Gunilla T. Westermark, Lars Lannfelt, Lars N. G. Nilsson, and Per Hammarström. *Imaging Distinct Conformational States of Amyloid- β Fibrils in Alzheimer's Disease Using Novel Luminescent Probes*, ACS Chem. Biol. (2007), **2(8)**,553–560.

Patent pending: HistoFast™ is protected by US 11/579,741 including corresponding applications and additional patent pending by BioChromix.

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