Monoclonal Mouse
Anti-Human Beta-Amyloid
Clone 6F/3D
Code No. M 0872
Lot 050. Edition 23.05.00

Presentation
Monoclonal mouse antibody supplied in liquid form as tissue culture supernatant (RPMI 1640 medium containing fetal calf serum) dialysed against 0.05 mol/L Tris/HCl, pH 7.2 containing 15 mmol/L NaN₃.

Mouse Ig concentration: 200 mg/L.
Isotype: IgG1, kappa.
Total protein concentration: 12.5 g/L.

Storage
2 - 8 °C.

Clone
6F/3D.

Immunogen
Synthetic peptide consisting of residues 8-17 (ser-gly-tyr-glu-val-his-his-gln-lys-leu) of the amyloid beta-protein/amyloid A4 (1) with an additional C-terminal cysteine residue was coupled to keyhole limpet haemocyanin and the conjugate was used as immunogen.

Specificity/reactivity
Alzheimer's disease is the most common cause of senile dementia in man and is characterized by abnormal filamentous protein deposits in the brain. The abnormal filaments appear within neurones as neurofibrillary tangles and as extracellular deposits. The extracellular filaments are seen in the characteristic senile plaques within the cortex, and in blood vessel walls of the meninges. The extracellular filaments have the staining properties of amyloid. Antibodies raised against amyloid beta-protein/amyloid A4 or peptides representing part of the protein recognize all of the structures mentioned above (2-7).

These extracellular amyloid deposits are composed of a 4 kDa protein, first described as beta-protein (8) and subsequently referred to as A4 (2); the term amyloid beta-protein/amyloid A4 has been suggested to avoid confusion over nomenclature. Molecular biological studies have established that amyloid beta-protein/amyloid A4 is derived from larger precursors produced as a variety of forms by alternative splicing. The precursors are synthesized by many tissues in addition to the brain (1,9-11).

In ELISA the antibody reacts specifically with the peptide immunogen coupled to haemocyanin but not with haemocyanin alone.

The antibody detects extracellular amyloid beta-protein/amyloid A4 within senile plaques and vessel amyloid in formalin-fixed, paraffin-embedded brains of Alzheimer's and Lewy body disease. Substantially increased sensitivity is obtained by pretreatment of tissue sections with formic acid (12).

Absorption of the antibody with peptide conjugated to haemocyanin or to myoglobin abolishes the immunoreactivity.

Staining procedures
Formalin-fixed and paraffin-embedded sections
Can be used on formalin-fixed, paraffin-embedded tissue sections. Pretreatment of tissue sections with concentrated formic acid for 2-3 minutes increases the intensity of immunostaining. Thorough washing with buffer must be performed after the acid treatment.

For tissue sections sensitive staining techniques are recommended, such as the LSAB®+ or the EnVision™+ system.
The antibody may be used at a dilution of 1:50 - 1:100 with the LSAB®+ system when tested on formalin-fixed, paraffin-embedded sections of human brain from a patient with Alzheimer’s disease.

Methodology: The antibody can be used manually as well as on automated immunostaining instruments.

References