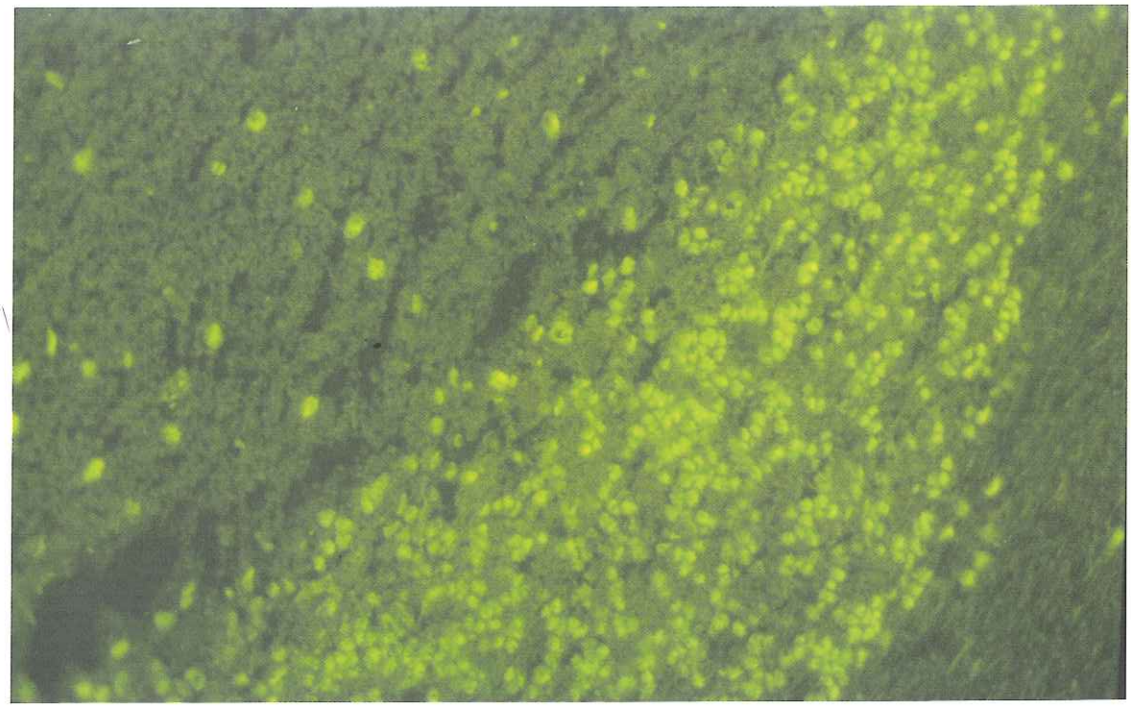
Appendix

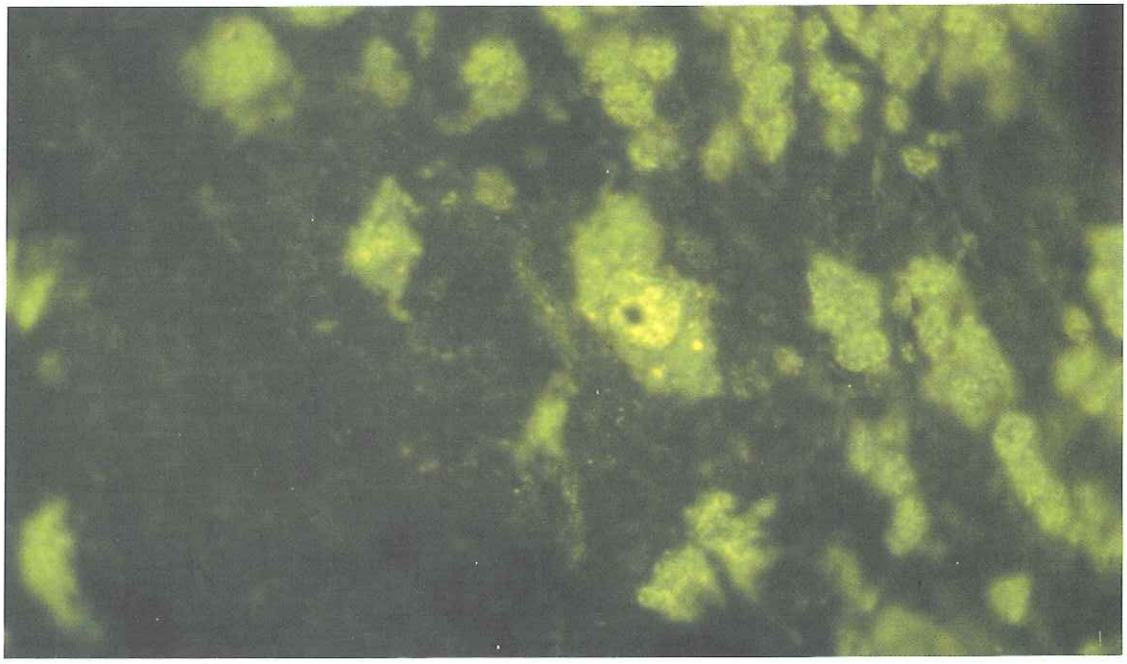
Figures

Chapter 2 Figure 1
Indirect immunofluorescence (dilution 1:100) of nuclei of granular and Purkinje cells with sparing of nuclei (100 x).

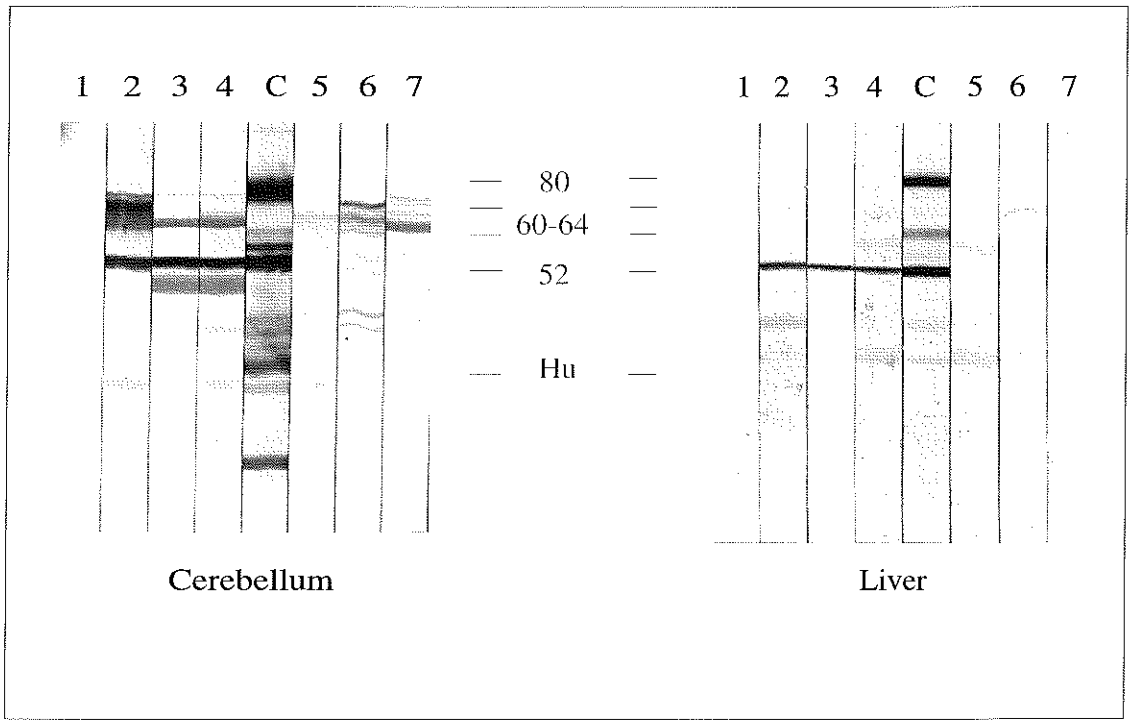
Chapter 2 Figure 2
Indirect immunofluorescence (dilution 1:100) of nuclei of granular and Purkinje cells with sparing of nuclei (400 x).



Chapter 2 Figure 1

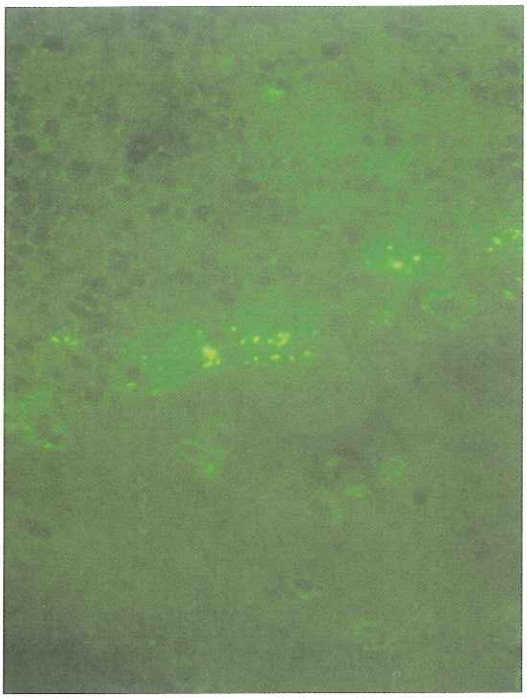


Chapter 2 Figure 2

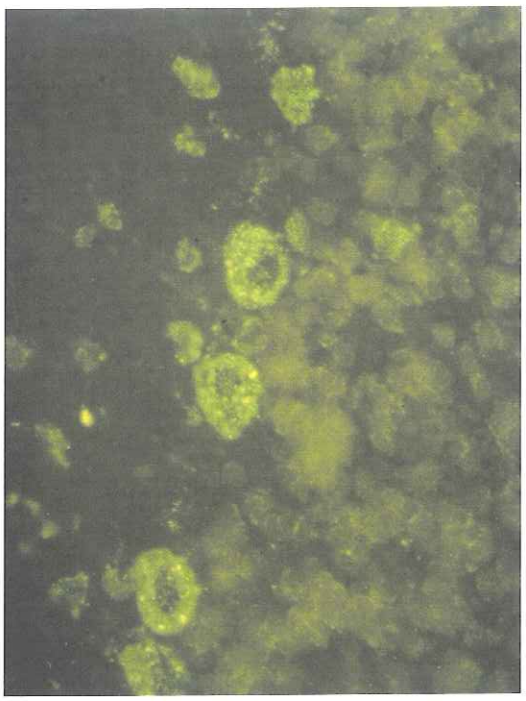


Chapter 5 Figure 1

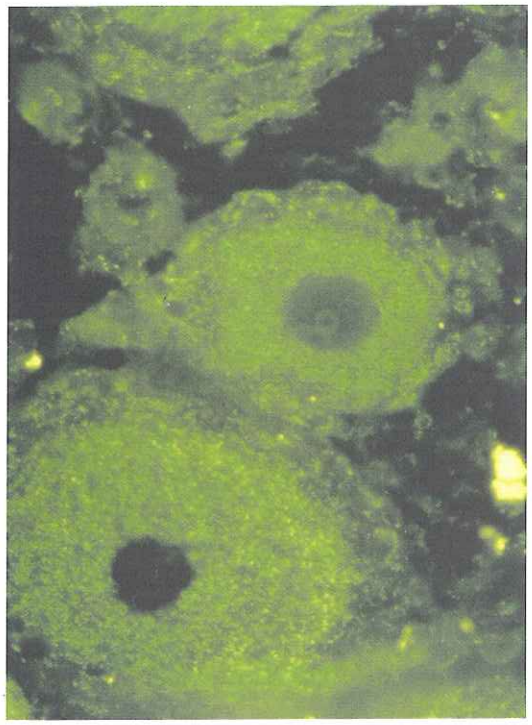
Chapter 5 Figure 1
Western immunoblot showing reactivity against rat cerebellar and liver protein extracts. Clearly visible is the 60-64 kD neuronal reactive protein complex in cerebellar extracts (lanes 2,3,4 and 7 incubated with serum of patient no. 1 to 4) not seen in liver extracts. Also visible is the 52 kD reactive band in lanes 2,3 and 4 in both cerebellar and liver extracts indicating the presence of a systemic auto-antibody (ANA). Lane 1 shows reactivity of normal healthy control serum. Lanes 5 and 6 are incubated with serum of patients with SCLC without neurological complications. Lanes marked C show reactivity of several sera known to have antibodies against neuronal and liver proteins and is used as control to indicate relative molecular weights (numbers in centre of figure).



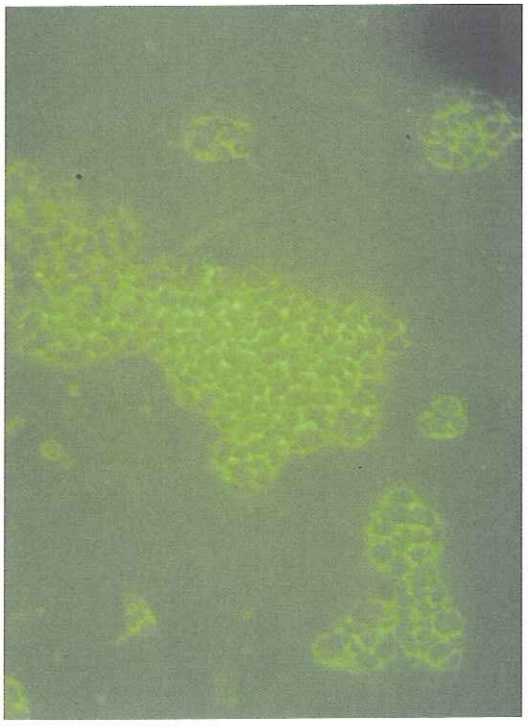
Chapter 5 Figure 2a



Chapter 5 Figure 2b



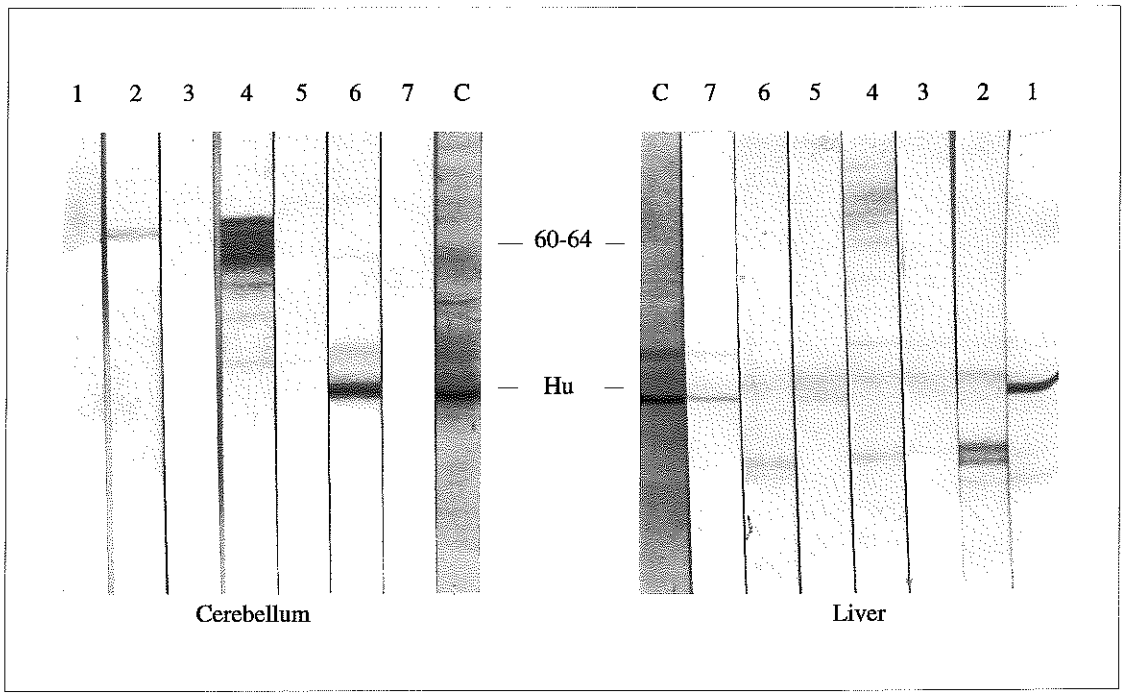
Chapter 5 Figure 2c



Chapter 5 Figure 2d

Chapter 5 Figure 2
Figure 2a and 2b: Indirect immunofluorescence with anti-St reactivity (patient 4, 1:500 dilution, 400 x magnification) showing cytoplasmic staining of Purkinje and granular layer cells compared to coarse granular staining of Purkinje cells as seen in figure 2b (anti-Yo positive patient, 1:500, 400 x magnification).
Figure 2c: The anti-St reactivity seen on human dorsal root ganglion cells showing clear speckled cytoplasmic staining (patient 4, 1:500 dilution, 400 x magnification).
Figure 2d: Cytoplasmic staining of a smal cell lung carcinoma cell line with the anti-St anti-serum of patient 4 (1:100 dilution, 100 x magnification).

Chapter 6 Figure 1a
Western immunoblot of rat cerebellar and liver protein extracts incubated with serum of normal healthy controls (lane 1, 2 and 3), serum of patient 4 (lane 4) and serum of a patient with SCLC without neurological symptoms (lane 5). Lane 6 and lane marked C are incubated with anti-Hu positive serum. Lane 7 is incubated with serum of a patient with sensory neuropathy without cancer. Clearly visible is the 60-64 kD protein complex not seen in liver protein extract or with control sera. Lane 1 shows reactivity against a liver protein not seen in neuronal extract with serum of normal healty control.

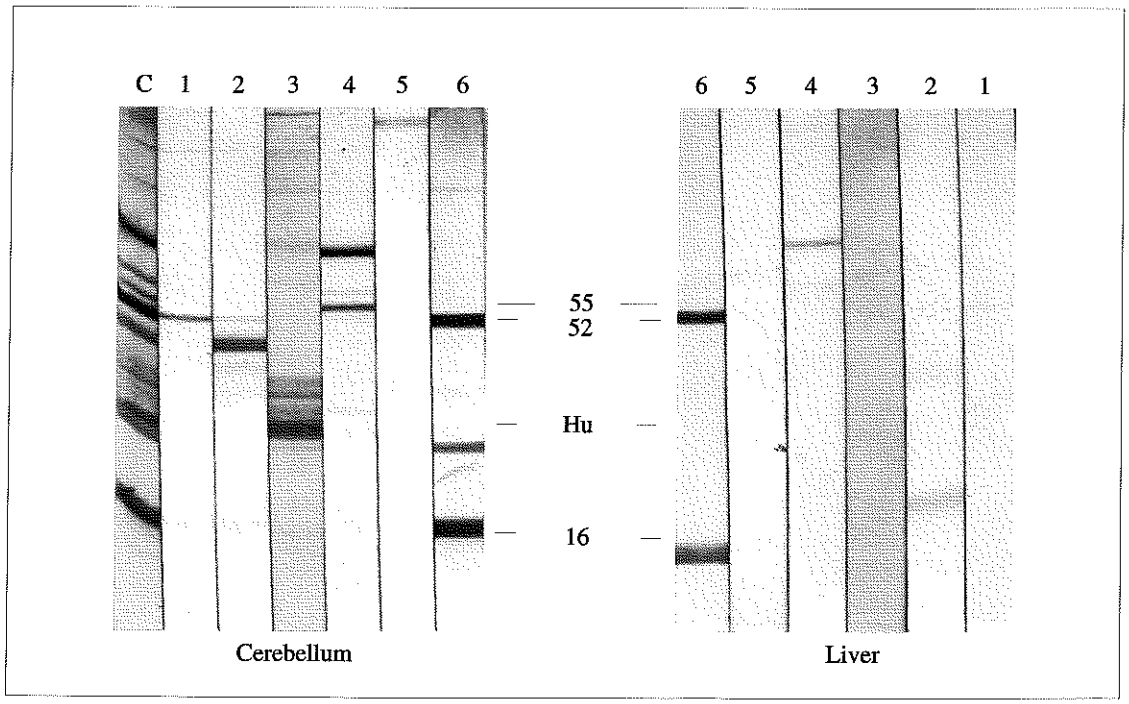


Chapter 6 Figure 1a

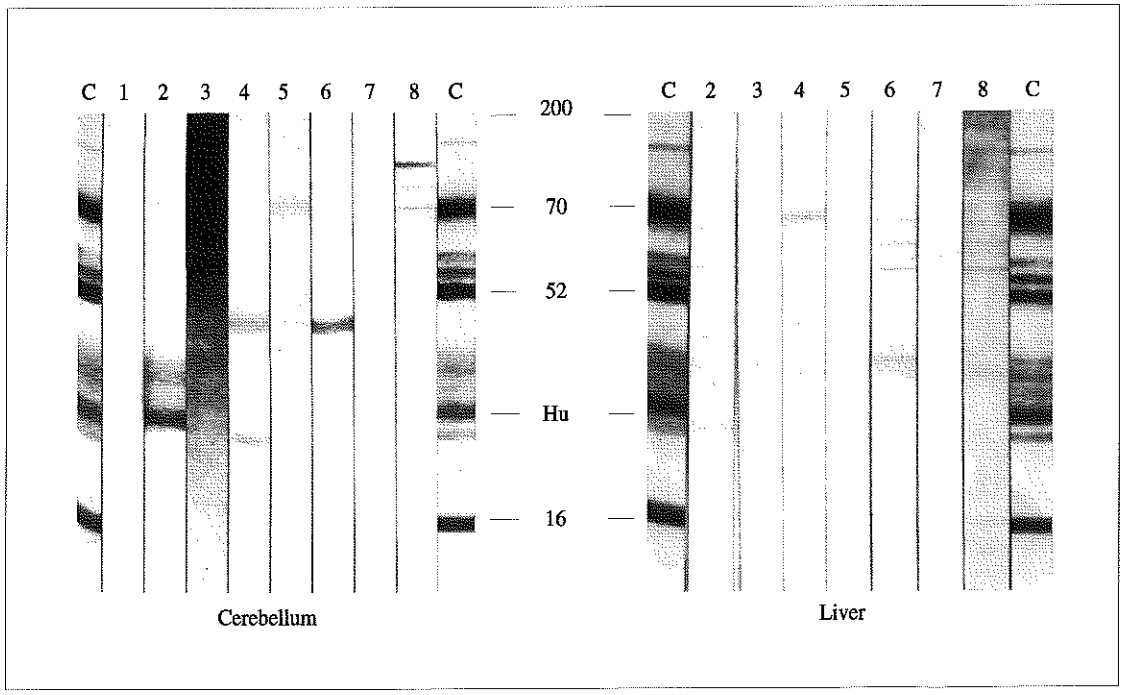
Chapter 6 Figure 2a
Western immunoblot of rat cerebellar and liver protein extracts showing a clear 55 kD reactive band in lane 4 incubated with serum of patient 6. This serum also showed reactivity against a 80 kD mitochondrial protein also seen in liver. Lane 3 incubated with anti-Hu positive serum. Lanes marked C are incubated with sera harbouring various anti-neuronal an liver antibodies and are used as marker to indicate relative molecular weights (numbers in center of text).

Chapter 6 Figure 3a
Western immunoblot of rat cerebellar and liver protein extracts showing reactivity against a 40-200 kD neuronal antigen when incubated with serum of patient 13. Lane 1 incubated with serum of normal healthy control. Lane 2 incubated with serum of anti-Hu positive patient. Lanes 4-8 incubated with different sera from control groups. Lanes marked C (all rat cerebellar extract) are incubated with several sera harbouring various anti-neuronal antibodies used as marker to indicate relative molecular weights (numbers in center of figure).

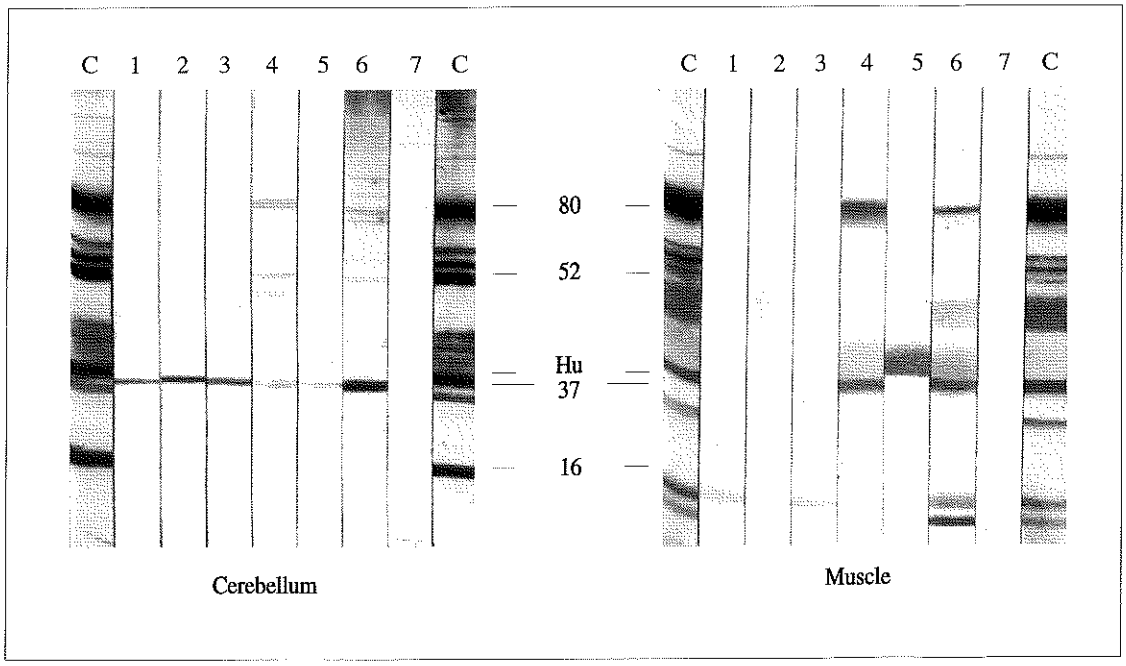
Chapter 6 Figure 4a
Western immunoblot of rat cerebellar and muscle protein extract. Lanes 1 to 6 all show anti-37 kD anti-neuronal reactivity not seen in control sera (lane 7) and only in 2 sera on muscle extract showing clearly weaker reactivity. Reactivity was not seen on liver extracts. Lanes marked C (all rat cerebellar extracts) are incubated with sera harbouring various anti-neuronal antibodies and used as marker to indicate relative molecular weights (numbers in center of figure).



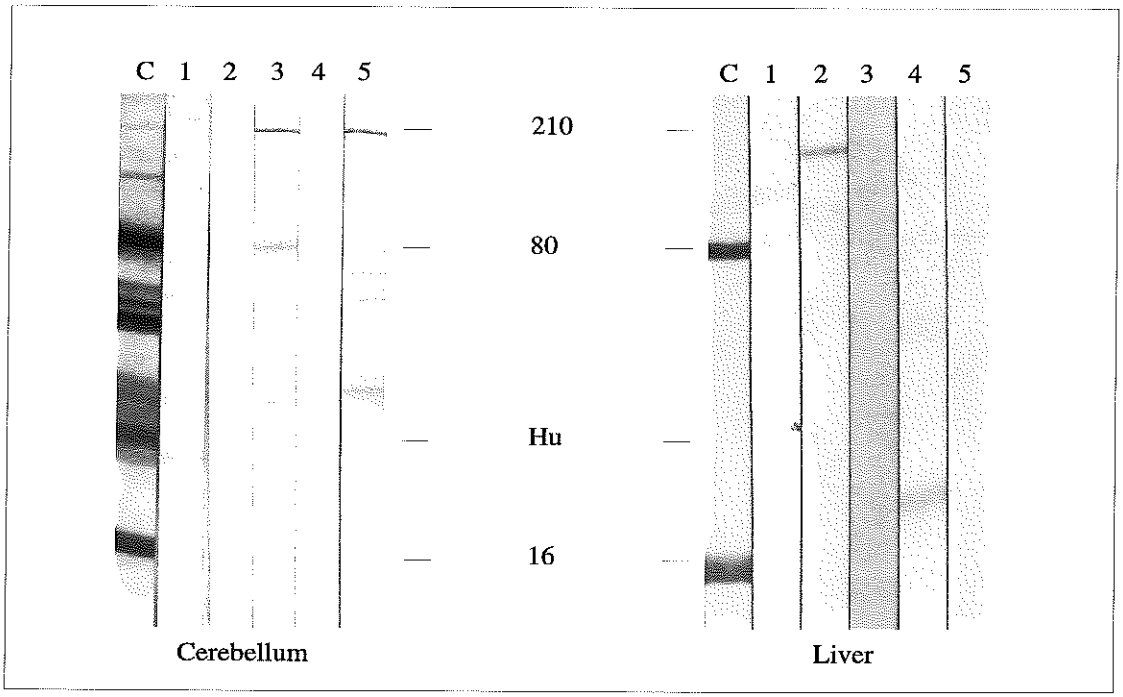
Chapter 6 Figure 2a



Chapter 6 Figure 3a



Chapter 6 Figure 4a



Chapter 6 Figure 5a

Chapter 6 Figure 5a
Western immunoblot of rat cerebellar and muscle protein extracts. Lanes 3 and 5 show anti-210 kD anti-neuronal specific reactivity not seen in control seral (lane 1,2 and 4). Lanes marked C (all rat cerebellar extracts) are incubated with several sera harbouring various anti-neuronal antibodies used as marker for relative molecular weights (numbers in center of figure).

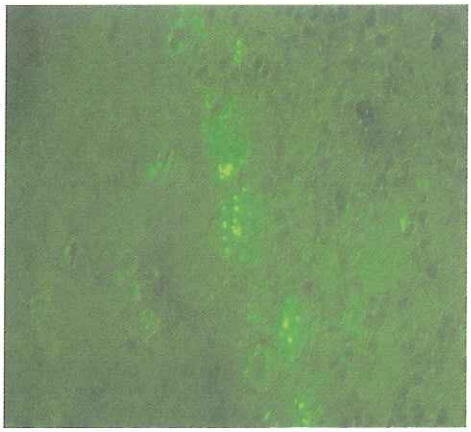
Chapter 6 Figure 1b
Indirect immunofluorescence on frozen rat cerebellar section (5um) with anti-60-64 kD reactivity (patient 4, 1:500 dilution, 400 x magnification) showing diffuse cytoplasmic staining of both Purkinje and granular layer cells.

Chapter 6 Figure 2b
Indirect immunofluorescence on frozen rat cerebellar section (5 um) with anti-55 kD reactivity (patient 5, 1,500 dilution, 400 x magnification) showing clear speckled nuclear staining of virtually all neurons.

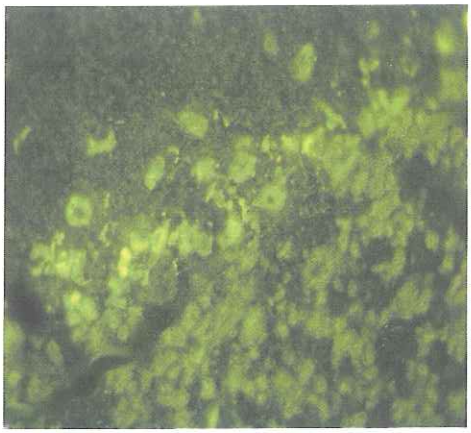
Chapter 6 Figure 3b
Indirect immunofluorescence on frozen rat cerebellar section (5um) with anti-40-200 kD reactivity (patient 12, 1:500 dilution, 400 x magnification) showing diffuse homogeneous staining of cerebellum.

Chapter 6 Figure 4b
Indirect immunofluorescence on frozen rat cerebellar section (5um) with anti-37 kD reactivity (patient 20, 1:500 dilution, 400 x magnification) showing bright nuclear staining of neurons not seen on systemic tissue.

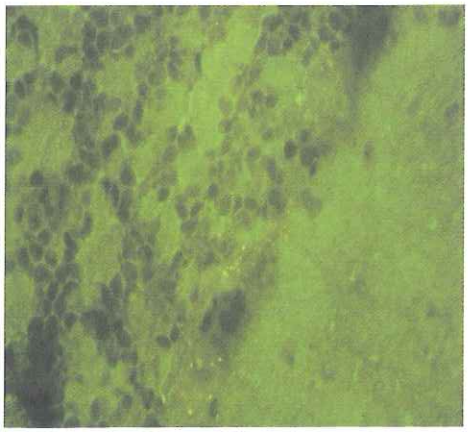
Chapter 6 Figure 5b
Indirect immunofluorescence on frozen rat cerebellar section (5um) with anti-210 kD reactivity (patient 61, 1:500 dilution, 400 x magnification) showing filamentous staining of astrocytes in molecular layer.



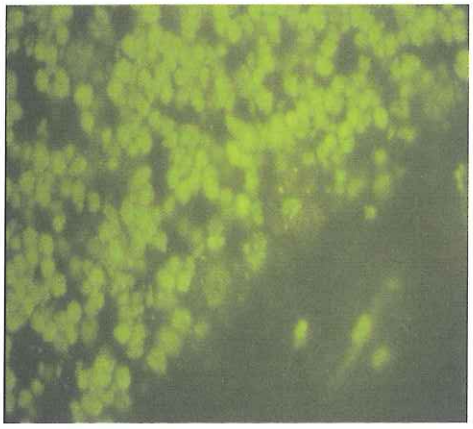
Chapter 6 Figure 1b



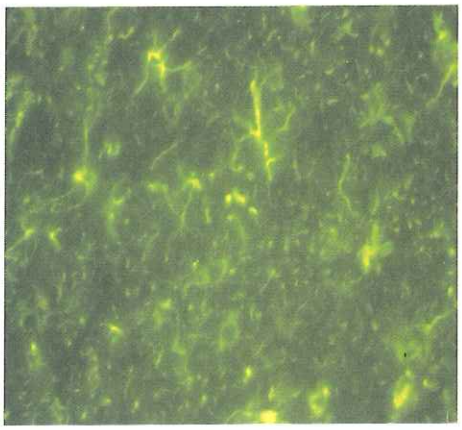
Chapter 6 Figure 2b



Chapter 6 Figure 3b



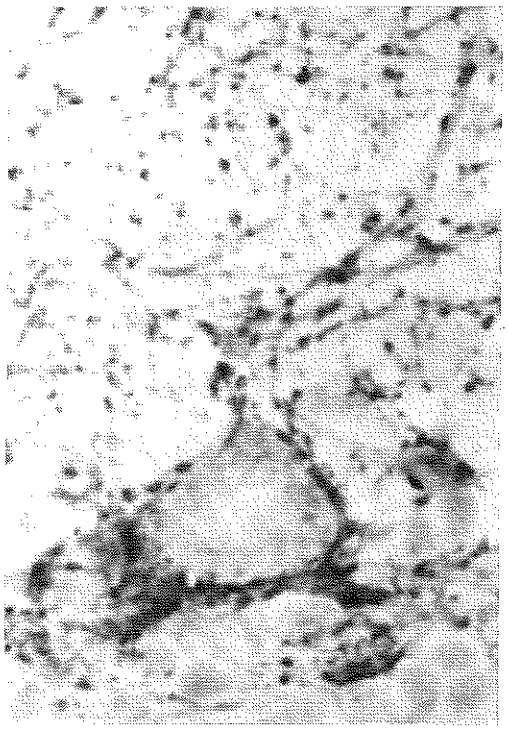
Chapter 6 Figure 4b



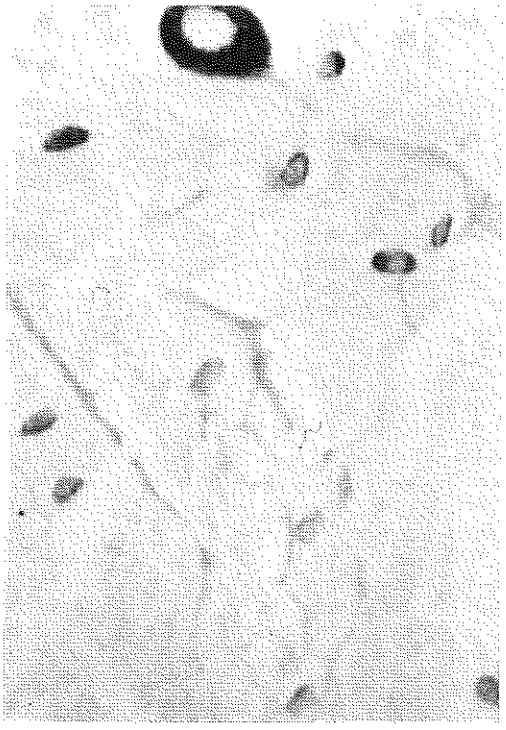
Chapter 6 Figure 5b

Chapter 7 Figure 1

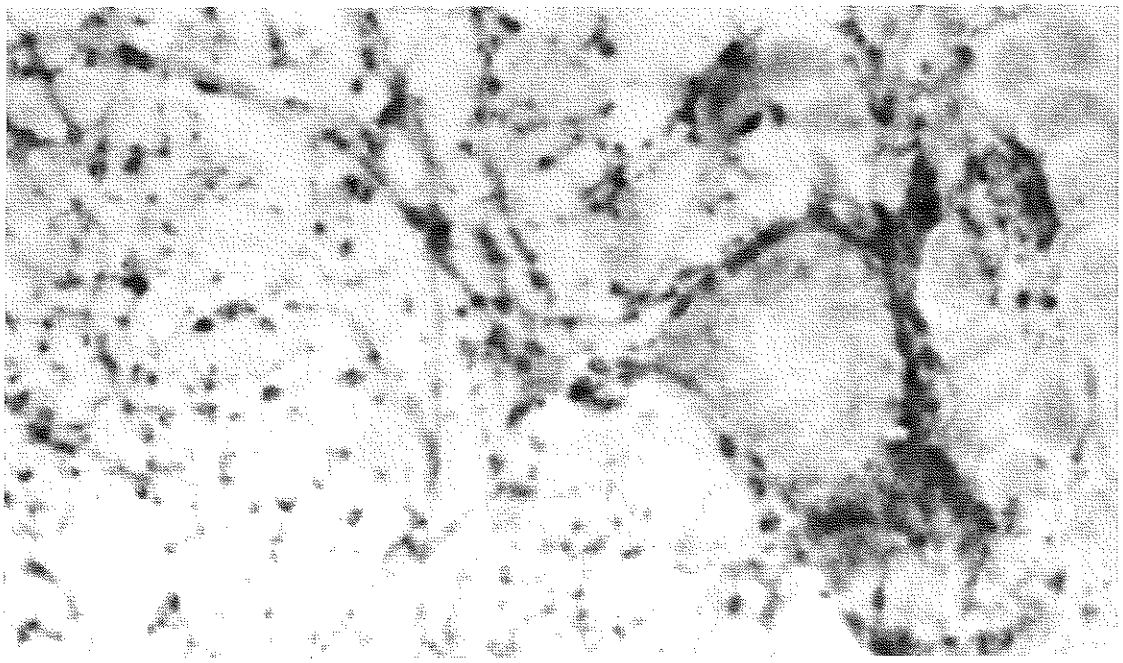
Anti-Tr (A), Anti-GAD (B), and anti-Yo (C) immunoreactivity in rat cerebellum. Both anti-Tr and anti-Yo antibodies immunoreact with the cytoplasm of Purkinje cells. Anti-Tr antibodies show a dotted staining in the molecular layer suggestive of immunoreactivity of dendritic spines of the Purkinje cells. Compare the dot pattern with that of anti-GAD antibodies (B) that label GABA-ergic nerve terminals. Basket and stellate neurons are anti-Tr negative but anti-Yo positive. A and B slightly counterstained with hematoxylin. Bar = 10 μm for panels A and B; bar = 15 μm for panel C.



Chapter 7 Figure 1a



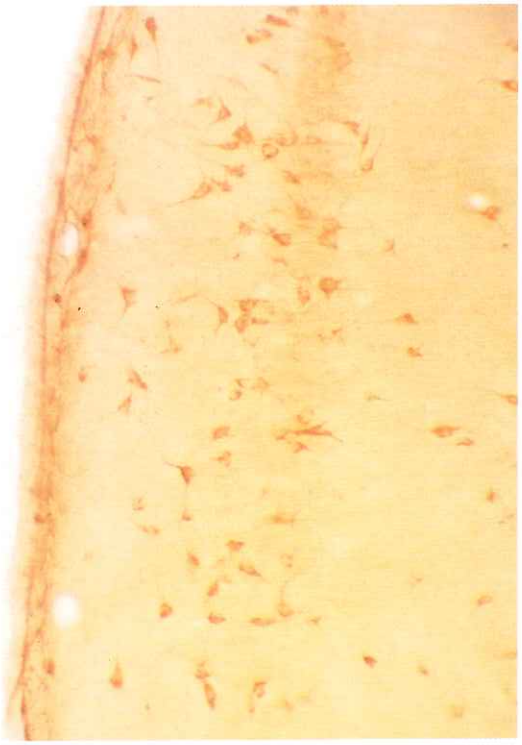
Chapter 7 Figure 1c



Chapter 7 Figure 1b

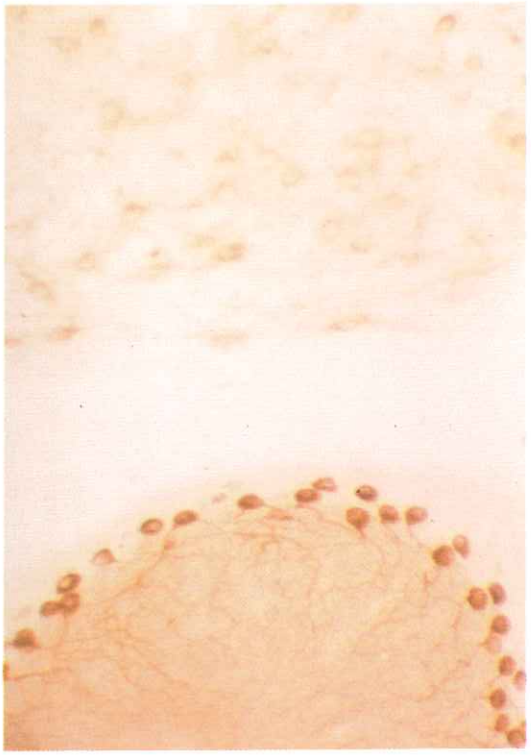
Chapter 7 Figures 2 and 3

Anti-Tr immunoreactivity in vibratome sections of rat cerebellum incubated with biotinylated anti-Tr IgG. Strong anti-Tr immunoreactivity is observed in Purkinje cells. The molecular layer shows the fine dotted pattern (2B). Neurons of the dentate nucleus are only weakly positive (3A). Anti-Tr immunoreactivity in vibratome sections of the rat entorhinal cortex (2A) and hippocampus (3B). Anti-Tr positive cells are present in layer II and scattered in the inner layers. Isolated Tr-immunoreactive non-pyramidal neurons are located in the stratum oriens, stratum pyramidale and stratum radiatum.



Chapter 7 Figure 2a

Chapter 7 Figure 2b



Chapter 7 Figure 3a

Chapter 7 Figure 3b