

Verification of alpha B-crystallin and Hapln2 expression in brain of patients with Parkinson's disease.

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Research question and background

The aim of this project is to better understand the molecular mechanisms underlying degeneration of dopaminergic neurons in Parkinson's disease. In our previous studies, we found that expression of alpha B-crystalline and Hapln2 proteins were up-regulated in PD brain compared with control. To verify whether alpha B-crystalline and Hapln2 are truly relevant to PD pathology, we examined their expression in a separate group of clinical samples provided by NBB using immunohistochemical staining.

Methods and tissues used

Our immunohistochemical analysis of brain sections from this cohort of four PD and three control subjects showed that the elevated Cryab levels observed were associated with gliosis in PD. A substantial fraction of glial cells in the ventral mesencephalon of PD patients displayed increased Cryab immunoreactivity, compared with controls. Next we would like to extend our study to a large cohort of PD, if feasible.

Results and conclusion

We also performed hapln2 immunohistochemical staining on these PD tissue sections. We found 'typical' Lewy body-like aggregates in remaining degenerating neurons in the substantia nigra of PD patients using home-made monoclonal antibody against hapln2. Unexpectedly, we found that the clone used in the staining showed strong cross-reactivity with alpha-synuclein, suggesting that these are false –positive staining. We are now characterising other clones of hapln2 monoclonal hybridoma and as soon as it is completed, we will start to perform the staining on PD brain sections again.