

Diagnostic value of skin RT-QuIC in Parkinson's disease: a two-laboratory study

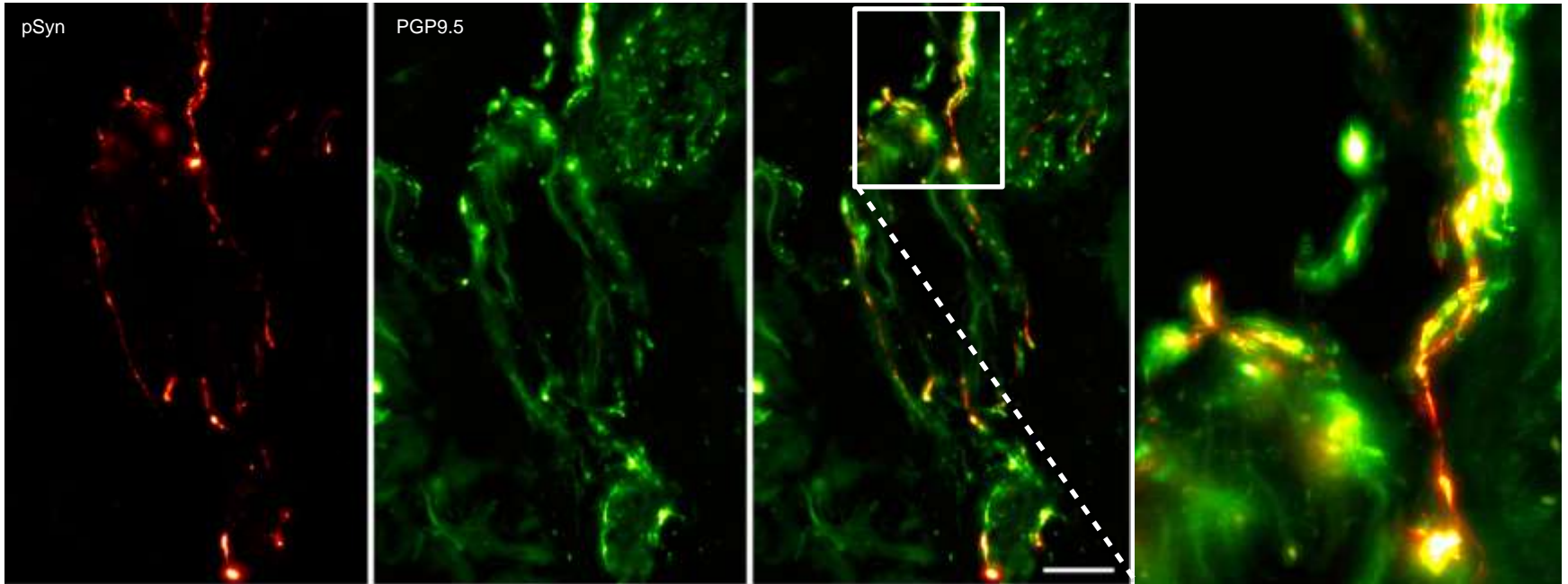
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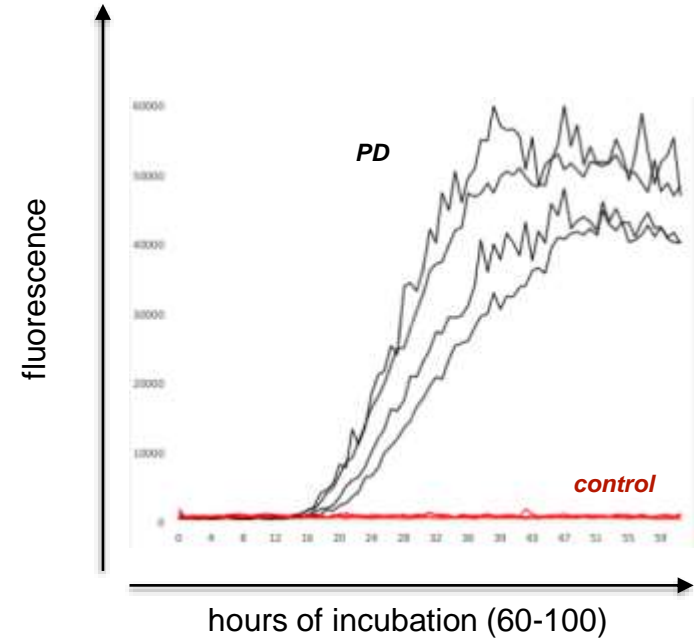
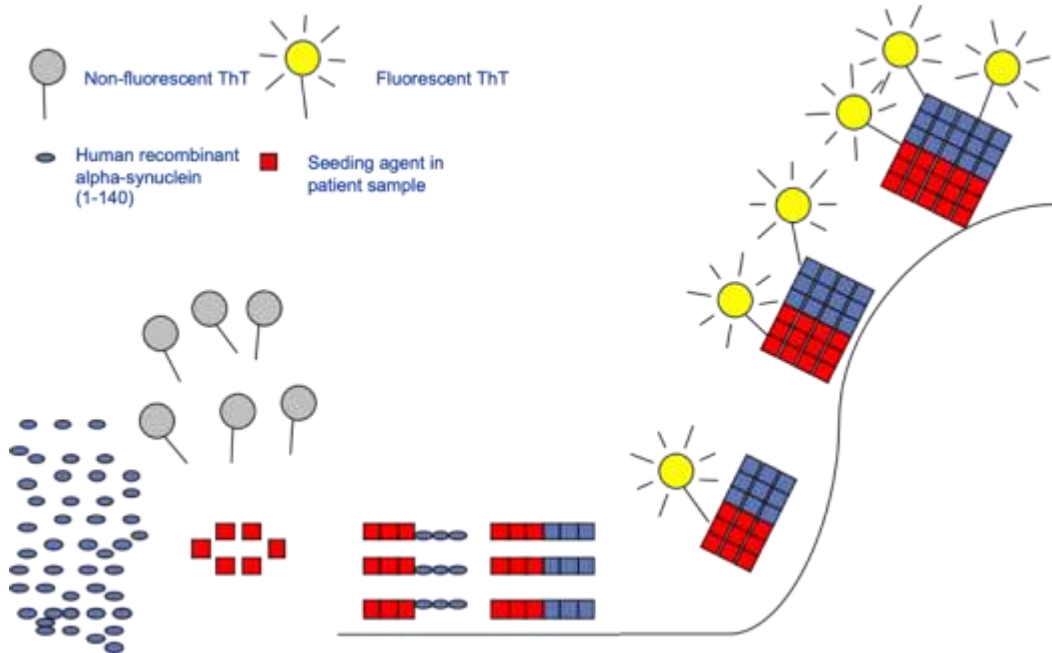
α -synuclein pathology present in dermal nerves



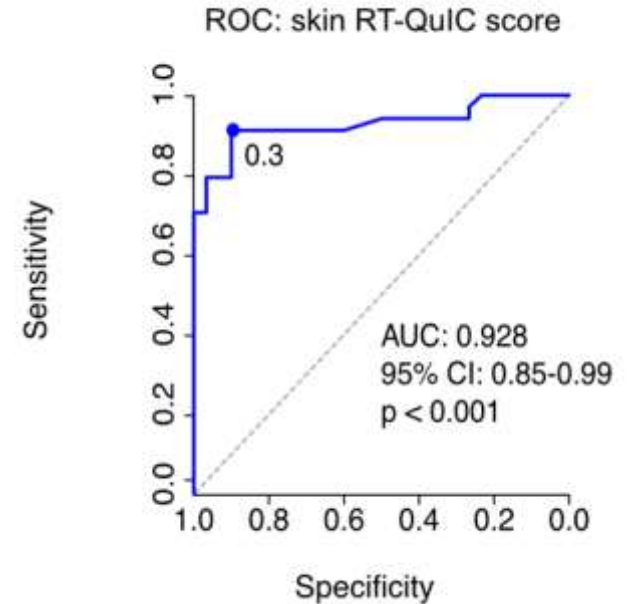
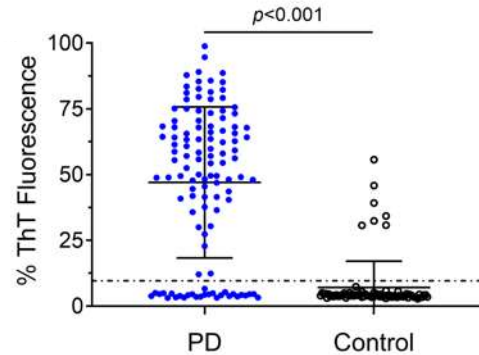
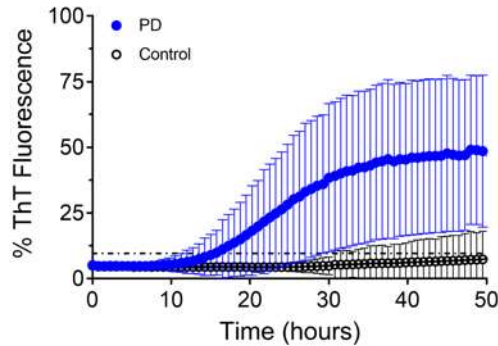
*Skin biopsy of a patient with REM-sleep behaviour disorder (RBD) - **prodromal** synucleinopathy*

α -syn seeding assays transform the diagnostics field

α -syn showing prion-like behaviour *in vitro* in real-time quaking induced conversion (RT-QuIC) / protein misfolding cyclic amplification (PMCA)

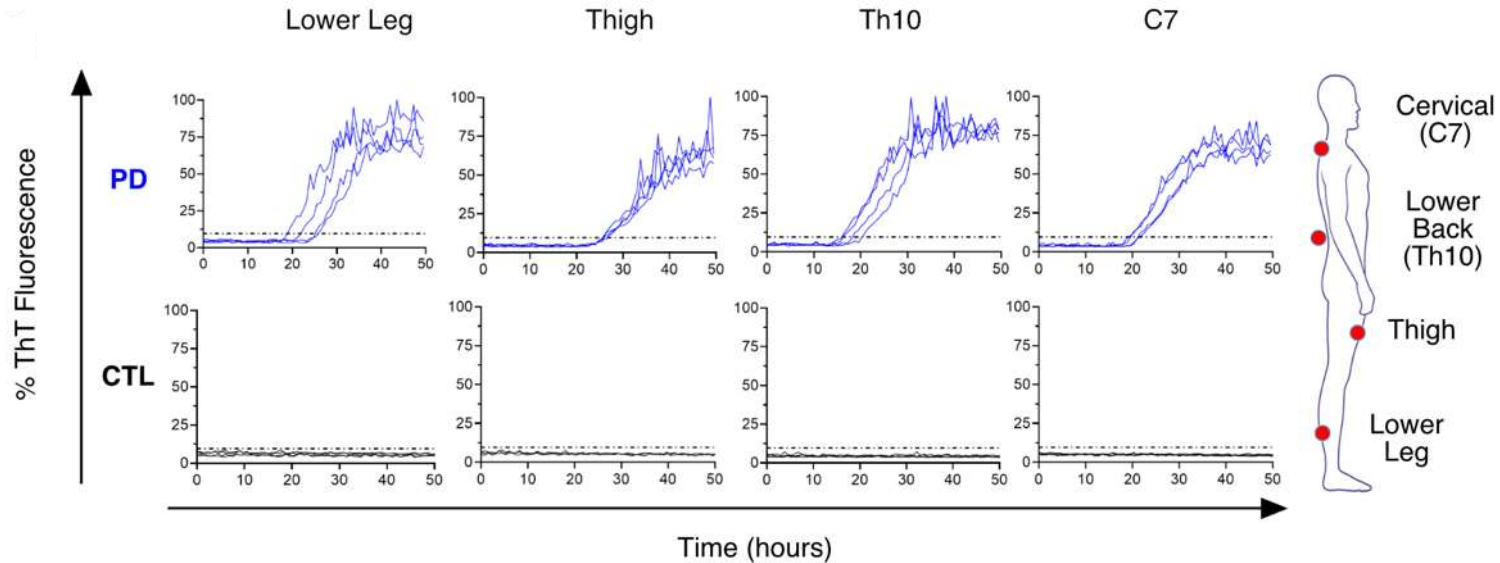


α -syn seeding in PD skin is (at least) as efficient as CSF



- 2 laboratory comparison study
- To include results of multiple biopsy sites and compare results of both assays -> composite skin RT-QuIC score

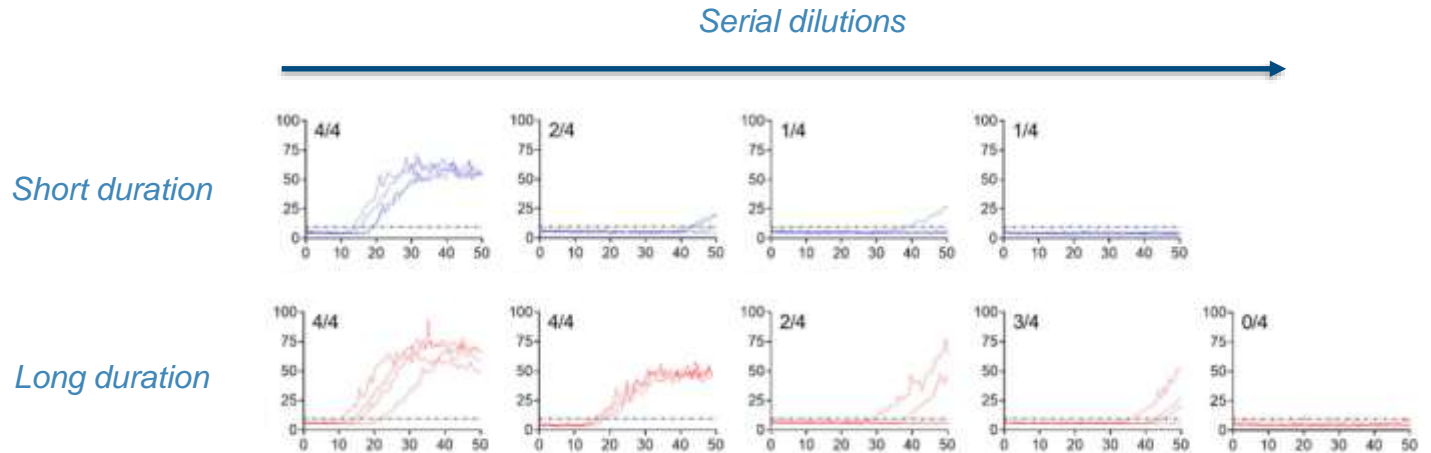
α -syn pathology widespread in the skin and highly reproducible



Quantification superior to IHC

Based either on number of positive replicates (crossing a certain threshold), maximum fluorescence or speed of aggregation (e.g. lag phase)

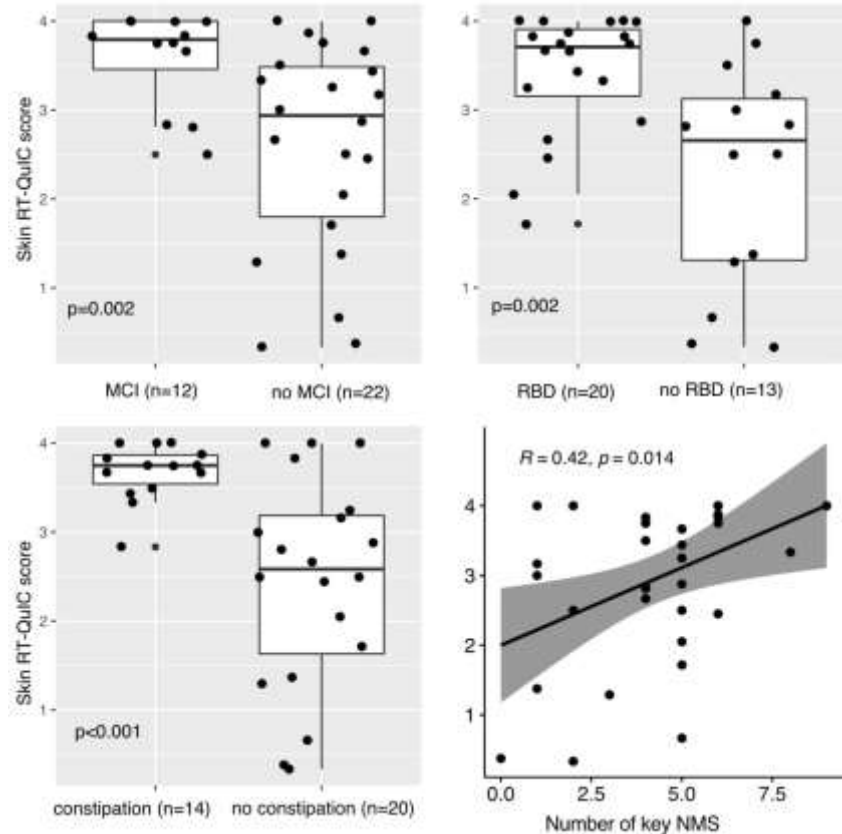
More precise quantification - end point dilutions to determine the seeding dose (SD_{50})



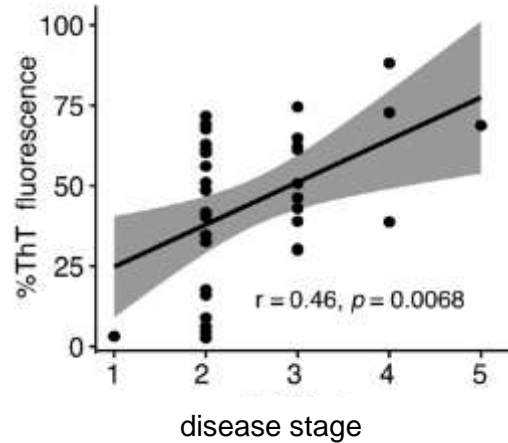
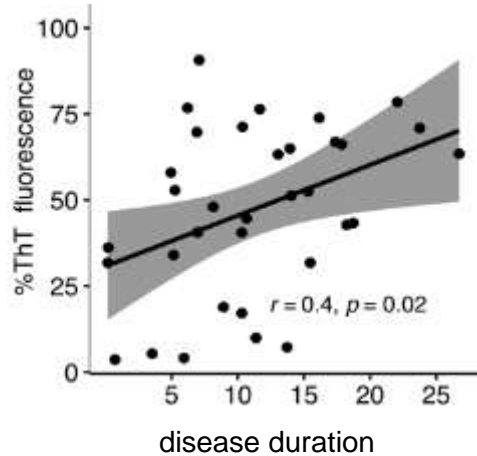
Shu Chen

Extent of peripheral α -syn pathology correlates with phenotype

- Mild cognitive impairment, RBD and constipation correlate with α -synuclein seeding
- “Malignant phenotype”?



There is some correlation with disease duration/stage



Limitations:

- low number of PD patients (n=34)
- mostly stage 2-3
- the shorter the disease duration - the more unreliable is the reference (clinical) diagnosis

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technician



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Daniela Schmitt
medical student



Celine Panzer
medical student



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ParkinsonFonds

Deutschland



Best wishes from Würzburg!

