

SUPPLEMENTARY MATERIAL

Tau seeding activity in skin biopsy differentiates tauopathies from synucleinopathies

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Summary:

Supplementary Table 1

Supplementary Table 2

Supplementary Figure 1

Supplementary Figure 2

Supplementary Table 1

	Variable	HC (n=14)	TAU (n=24)	SYN (n=20)	Overall P-Value	TAU vs HC	SYN vs HC	TAU vs SYN
TauK18	ThT End fluorescence Ankle	23114 ± 9794	109595 ± 24221	6862 ± 1385	0.000	0.004	0.560	0.000
	ThT End fluorescence Cervical	83394 ± 20072	112111 ± 24601	37739 ± 14526	0.039	0.638	0.352	0.030
	Lag Time (h) Ankle	19.9 ± 1.1	14.1 ± 1.7	21.4 ± 0.6	0.000	0.015	0.771	0.001
	Lag Time (h) Cervical	13.9 ± 1.8	12.3 ± 1.8	19.3 ± 1.3	0.011	0.803	0.112	0.009
	T50 (h) Ankle	20.4 ± 0.8	16.2 ± 1.5	22.0 ± 0.0	0.000	0.034	0.615	0.001
	T50 (h) Cervical	16.4 ± 1.6	12.3 ± 1.7	20.2 ± 0.9	0.005	0.364	0.236	0.003
	Seeding Score Ankle	0.02 ± 0.02	0.34 ± 0.08	0.0 ± 0.0	0.000	0.004	0.969	0.001
	Seeding Score Cervical	0.16 ± 0.07	0.52 ± 0.10	0.11 ± 0.06	0.002	0.024	0.932	0.003
Seeding Score Total	0.11 ± 0.03	0.42 ± 0.07	0.06 ± 0.03	0.000	0.001	0.855	0.000	
TauK19	ThT End fluorescence Ankle	5086 ± 357	20051 ± 8515	12912 ± 3564	0.356	0.328	0.794	0.782
	ThT End fluorescence Cervical	6899 ± 1285	10894 ± 2664	10625 ± 1678	0.483	0.478	0.620	0.996
	Lag Time (h) Ankle	24.0 ± 0.0	21.9 ± 0.9	22.5 ± 0.7	0.195	0.311	0.203	0.859
	Lag Time (h) Cervical	24.0 ± 0.0	22.1 ± 0.7	22.5 ± 0.8	0.204	0.184	0.441	0.933
	T50 (h) Ankle	24.0 ± 0.0	21.9 ± 0.9	22.5 ± 0.7	0.195	0.311	0.203	0.859
	T50 (h) Cervical	24.0 ± 0.0	24.0 ± 0.0	24.0 ± 0.0	1.000	1.000	1.000	1.000
	Seeding Score Ankle	0.00 ± 0.00	0.12 ± 0.6	0.16 ± 0.7	0.178	0.237	0.218	0.946
	Seeding Score Cervical	0.04 ± 0.03	0.20 ± 0.6	0.13 ± 0.06	0.264	0.235	0.665	0.805
Seeding Score Total	0.03 ± 0.02	0.16 ± 0.05	0.15 ± 0.06	0.173	0.177	0.295	0.998	

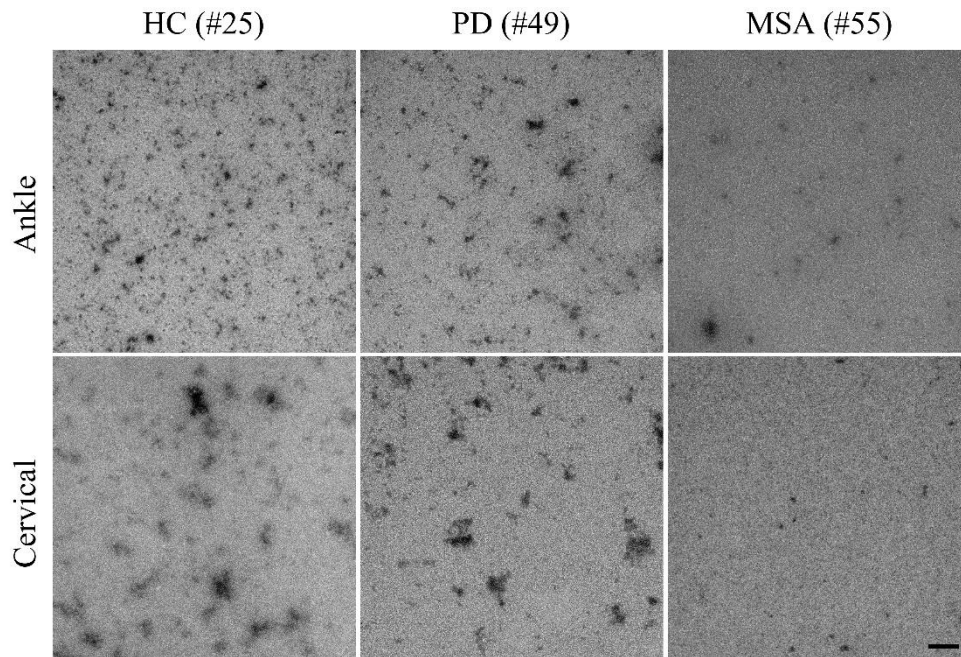
Kinetic parameters of TauK18 and TauK19 seeding activity at ankle and cervical in main groups. Variables are reported as mean ± SE. A P<0.05 was considered significant and shown in bold.

Supplementary Table 2

	Variable	HC (n=14)	PSP (n=18)	CBD (n=6)	PD (n=14)	MSA (n=6)	Overall P-value	PSP vs HC	CBD vs HC	PD vs HC	MSA vs HC	PSP vs CBD	PSP vs PD	PSP vs MSA	CBD vs PD	CBD vs MSA	PD vs MSA
TauK18	ThT End fluor. Ankle	23114 ± 9794	113535 ± 29659	97773 ±44513	5632 ±816	9733 ± 4233	0.002	0.022	0.334	0.978	0.997	0.993	0.004	0.063	0.150	0.337	0.999
	ThT End fluor. Cervical	83394 ± 20072	114312 ± 28864	105506 ± 51244	17494 ± 9939	84976 ± 37892	0.074	0.886	0.988	0.354	0.999	0.999	0.042	0.936	0.320	0.995	0.585
	Lag Time (h) Ankle	19.9 ± 1.1	13.9 ± 2.1	14.6 ± 3.3	21.9 ± 0.1	21.0 ± 1.9	0.004	0.057	0.384	0.903	0.999	0.999	0.004	0.228	0.110	0.537	0.965
	Lag Time (h) Cervical	13.9 ± 1.8	12.2 ± 2.1	12.8 ± 4.1	20.5 ± 1.2	16.3 ± 3.0	0.037	0.965	0.998	0.157	0.966	0.999	0.024	0.772	0.238	0.929	0.718
	T50 (h) Ankle	20.4 ± 0.8	15.8 ± 1.7	17.7 ± 2.8	22.0 ± 0.0	22.0 ± 0.0	0.006	0.095	0.656	0.911	0.936	0.984	0.009	0.082	0.270	0.437	0.999
	T50 (h) Cervical	16.4 ± 1.6	13.3 ± 1.9	13.3 ± 3.8	20.8 ± 1.1	18.7 ± 1.7	0.028	0.704	0.888	0.413	0.956	0.999	0.022	0.451	0.169	0.653	0.963
	Seeding Score Ankle	0.02 ± 0.02	0.37 ± 0.10	0.28 ± 0.18	0.00 ± 0.00	0.00 ± 0.00	0.002	0.012	0.380	0.999	0.999	0.959	0.006	0.063	0.292	0.461	0.999
	Seeding Score Cervical	0.16 ± 0.07	0.53 ± 0.11	0.50 ± 0.22	0.07 ± 0.07	0.22 ± 0.16	0.013	0.086	0.439	0.970	0.998	0.999	0.016	0.464	0.200	0.751	0.939
	Seeding Score Total	0.11 ± 0.03	0.44 ± 0.08	0.38 ± 0.13	0.04 ± 0.04	0.12 ± 0.08	0.000	0.005	0.192	0.946	0.999	0.986	0.000	0.065	0.055	0.383	0.966
TauK19	ThT End fluor. Ankle	5086 ± 357	23183 ± 11183	10657 ± 5913	14017 ± 6521	11806 ± 3967	0.591	0.488	0.995	0.975	0.992	0.906	0.968	0.932	0.999	0.999	0.999
	ThT End fluor. Cervical	6899 ± 1285	12373 ± 3479	6456 ± 1363	10850 ± 2652	10400 ± 2311	0.555	0.564	0.999	0.928	0.953	0.718	0.997	0.993	0.940	0.958	0.999
	Lag Time (h) Ankle	24.0 ± 0.0	22.5 ± 0.8	22.2 ± 1.8	21.8 ± 1.5	22.1 ± 0.8	0.517	0.689	0.776	0.588	0.708	0.999	0.939	0.997	0.998	0.999	0.999
	Lag Time (h) Cervical	24.0 ± 0.0	21.7 ± 0.9	24.0 ± 0.0	23.1 ± 0.9	21.7 ± 1.5	0.154	0.187	0.999	0.970	0.497	0.4323	0.822	0.999	0.983	0.644	0.915
	T50 (h) Ankle	24.0 ± 0.0	22.5 ± 0.8	22.2 ± 1.8	21.8 ± 1.5	22.1 ± 0.8	0.517	0.689	0.776	0.588	0.708	0.999	0.939	0.997	0.998	0.999	0.999
	T50 (h) Cervical	24.0 ± 0.0	24.0 ± 0.0	24.0 ± 0.0	24.0 ± 0.0	24.0 ± 0.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	Seeding Score Ankle	0.00 ± 0.00	0.15 ± 0.07	0.11 ± 0.11	0.22 ± 0.11	0.12 ± 0.12	0.394	0.418	0.894	0.382	0.894	0.997	0.970	0.997	0.937	0.999	0.937
	Seeding Score Cervical	0.04 ± 0.03	0.24 ± 0.08	0.05 ± 0.05	0.10 ± 0.06	0.17 ± 0.11	0.741	0.514	0.999	0.982	0.982	0.780	0.964	0.964	0.994	0.994	0.999
	Seeding Score Total	0.03 ± 0.02	0.19 ± 0.06	0.08 ± 0.05	0.16 ± 0.05	0.15 ± 0.11	0.336	0.266	0.987	0.689	0.788	0.830	0.999	0.995	0.960	0.982	0.999

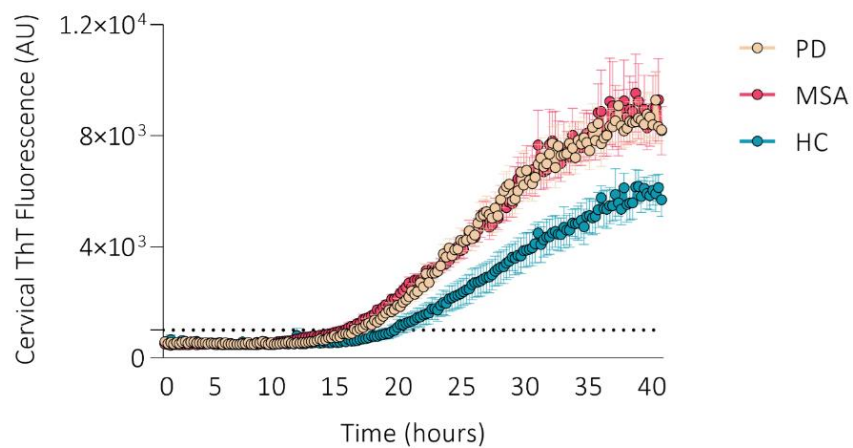
Kinetic parameters of TauK18 and TauK19 seeding activity at ankle and cervical sites in disease sub-groups. Variables are reported as mean ± SE. A P<0.05 was considered significant and shown in bold.

Supplementary Figure 1



TEM images of TauK18-SAA end-products from ankle and cervical sites from HC, PD, and MSA subjects. Scale bar 100nm.

Supplementary Figure 2



Kinetic curves of Alpha-Synuclein seeding activity in cervical sites. Each dot represents the mean (\pm SE) of the ThT fluorescence intensity of all samples tested per group against time.