

Ligands for Protein Fibrils of Amyloid- β , α -Synuclein, and Tau

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Supporting Information

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Dataset Generation and Preparation

Protein-ligand binding data were acquired from literature searches using Web of Science and Google Scholar, and the PDBbind and ChEMBL online databases.^{1,2} The requirements to be included in this database were 1) a known chemical structure, 2) a structure that did not contain any metal atoms, 3) a K_d , K_i , or IC_{50} measurement, 4) a fibril target related to A β , tau, or α Syn, and 5) publication prior to 2024. A total of 4,288 measurements of ligand-amyloid fibril interactions were found for 2,404 unique ligands.³⁻⁴⁷² Details of the ligands, publications, and binding data, including SMILES and DOI, are found in the supporting .csv file.

The attached spreadsheet contains binding measurements for compounds organised in the following columns:

Compound: The name of the reported compound. These names are either taken from the publication, or they are a combination of (a) the publication lead author's name, (b) the year of publication (optional), and (c) the compound number in the publication.

SMILES: The SMILES formula for the reported compound.

DOI: The DOI of the publication containing this binding measurement (if relevant).

Patent number: The number of the patent containing this binding measurement (if relevant).

K_d / nM: The reported dissociation constant from a saturation binding assay. **n.b.** refers to no binding being measured.

K_i / nM: The reported dissociation constant from a competition binding assay. **n.b.** refers to no binding being measured.

K error / nM: The error value provided for the reported K_d or K_i measurement.

IC₅₀ / nM: The reported IC₅₀ from a competition binding assay.

IC₅₀ error / nM: The error value provided for the reported IC₅₀ measurement.

Reporting ligand: If a competition binding assay was performed, this is the ligand displaced in the assay.

Target fibril: The fibril target used in the binding assay. **Ab:** A β fibrils (unknown isoform); **Ab(10-43):** A β (10-43) fibrils; **Ab40:** A β (1-40) fibrils; **Ab40/Ab42:** fibrils composed of both A β (1-40) and A β (1-42); **Ab42:** A β (1-42) fibrils; **AbZn:** A β fibrils (unknown isoform) enriched with Zinc ions; **AD:** fibrils from the brain of patients with Alzheimer's disease (usually in the form of brain homogenates, but sometimes brain sections or isolated fibrils); **AD-Ab:** A β fibrils either isolated or enriched from AD brain tissue; **AD-t:** tau fibrils either isolated or enriched from AD brain tissue; **aS:** α -synuclein fibrils; **AD-CAA:** fibrils isolated from cerebral amyloid angiopathy pathology in AD; **DLB:** fibrils from the brain of patients with dementia with Lewy bodies (usually in the form of brain homogenates); **DLB-Ab:** A β fibrils either isolated or enriched from DLB brain tissue; **DLB-aS:** α -synuclein fibrils either isolated or enriched from DLB brain tissue; **HC:** brain tissue from healthy patients; **PD:** fibrils from the brain of patients with Parkinson's disease; **PD-aS:** α -synuclein fibrils either isolated or enriched from PD brain tissue; **PiD:** fibrils from the brain of patients with Pick's disease; **PiD-t:** tau fibrils either isolated or enriched from PiD brain tissue; **PSP:** fibrils from the brain of patients with Progressive Supranuclear Palsy; **roAb:** brain

homogenates from a mouse model of AD; **roAb40**: rodent A β (1-40) fibrils; **t**: tau fibrils; **Tg mouse-aS**: α -synuclein fibrils from a transgenic mouse.

Target type: The type of target being assayed: f: fibril; b: biological sample; section: brain section.

Target source: Where the fibril target was obtained from (e.g. synthetically, recombinantly, a supplier, a specific brain region).

Sample preparation: A description of where the fibril target was obtained from (e.g. synthetically, recombinantly, or a specific brain region), and how the fibril target was prepared if applicable. This information is taken directly from the publication where available.

Notes: Any notes useful for interpreting the binding measurement.

Assay type: The type of binding assay performed. Typically by measuring fluorescence (“Fluorescence”) or using a radiolabelled ligand (“Radioligand”) in a saturation or competition assay. Also includes measurements made using autoradiography, ELISA (enzyme-linked immunosorbent assay), ITC (isothermal titration calorimetry), LCMS (liquid chromatography-mass spectrometry), SPR (surface plasmon resonance), UV saturation, and microscale thermophoresis.

Assay conditions: A description of how the binding assay was performed, taken directly from the publication where available.

Structures of fibrils formed from A β , tau, or α Syn, were found by searching the RCSB PDB.^{3,4,473–565}

Data Tables

Table S1. Details of α Syn fibrils formed *in vitro* that have structures reported on the PDB. Blank entries indicate that no information was given.

Study	Buffer	[α Syn] / μ M	Protein Modifica- tions	Additives	pH	T / °C	Agitation	Time	PDB
Chen, S. W. <i>et al.</i> 2024									8RI9
Monistrol, J. <i>et al.</i> 2024	50 mM NaPO ₄ , 100 mM NaCl, 0.05% w/v NaN ₃	200			7.3	37	1,000 rpm	7 days	8RQM, 8RRR
Tao, Y. Q. <i>et al.</i> 2024				heparin				1 h	8HZB, 8HZC
Tao, Y. Q. <i>et al.</i> 2024				heparin				3 days	8HZS
Tao, Y. <i>et al.</i> 2023	50 mM Tris, 150 mM NaCl, 0.05% NaN ₃	500		0.5 mol.% seeds	7.5	37	900 rpm	5 days	7YNG, 7YNG, 7YNL, 7YNM, 7YNN, 7YNO, 7YNP, 7YNQ, 7YNR, 7YNS, 7YNT, 7WMM
Zhang, S. <i>et al.</i> 2023	50 mM Tris-HCl, 150 mM KCl, 0.05% NaN ₃	500		0.5 vol.% seeds	7.5	37	900 rpm	5 days	7YK2
Zhang, S. <i>et al.</i> 2023	50 mM Tris-HCl, 150 mM KCl, 0.05% NaN ₃	500		0.5 vol.% seeds	7.5	37	900 rpm	5 days	7YK8
Frieg, B. <i>et al.</i> 2022	50 mM HEPES, 100 mM NaCl	330		POPC/POPA lipids (5:1 lipid:protein ratio)		37	Repeated soni- cation and incu- bation	96 h	8ADS, 8ADU, 8ADV, 8ADW, 8AEX, 8A4L
Tao, Y. <i>et al.</i> 2022	50 mM Tris-HCl, 150 mM KCl, 0.05% NaN ₃	50		600 μ g/mL heparin, 1 mol.% seeds	7.5		900 rpm	5 days	7V4A, 7V4B, 7V4C
Tao, Y. <i>et al.</i> 2022				heparin					7V4D
Hojjatian, A. <i>et al.</i> 2020	10 mM phosphate buffer	70		20 μ M tau	7.4	37	250 rpm	1 day	7L7H
Long, H. <i>et al.</i> 2021	50 mM Tris, 150 mM KCl, 0.05% NaN ₃	100		0.5 mol.% seeds (E46K mutant α Syn seeds used)	7.5	37	900 rpm	7 days	7C1D
Guerrero-Ferreira, R. <i>et al.</i> 2019	50 mM Tris-HCl, 150 mM KCl	700			7.5	37	600 rpm	7 days	6SST, 6SSX, 6RT0, 6RTB
Li, B. <i>et al.</i> 2018	15 mM tetrabutylphosphonium bromide	300				rt		14-30 days	6CU7, 6CU8
Tuttle, M. D. <i>et al.</i> 2016	50 mM sodium phosphate, 0.1 mM EDTA, 0.02% NaN ₃	15 mg/mL			7.4	37	200 rpm	3 weeks	2N0A
Balana, A. T. <i>et al.</i> 2024	50 mM Tris, 150 mM NaCl		Ser87 O-GlcNAc		7.5	37	1,000 rpm	14 days	8GF7
Zhao, Q. <i>et al.</i> 2023	50 mM Tris-HCl, 150 mM KCl, 0.05% w/v NaN ₃	100	N-term acetylation	100 μ M FeCl ₃	7.5	37	900 rpm	7 days	7XJX
McGlinchey, R. P. <i>et al.</i> 2021	20 mM NaPi, 140 mM NaCl	180	N-term trunc: α Syn (41-140)		7.4	37	600 rpm	4-5 days	7LC9
Zhao, K. <i>et al.</i> 2020	50 mM Tris, 150 mM KCl, 0.05% NaN ₃	100	Tyr39 phosphoryla- tion	0.5 vol.% seeds	7.5	37	900 rpm	2 weeks	6L1T, 6L1U
Ni, X. <i>et al.</i> 2019	10 mM NaPi, 140 mM NaCl	100-300	N-term acetylation		7.4	37	600 rpm	4-5 days	6OSJ
Ni, X. <i>et al.</i> 2019	10 mM NaPi, 140 mM NaCl	100-300	N-term acetylation, C-term trunc: α Syn (1-122)		7.4	37	600 rpm	4-5 days	6OSL

Study	Buffer	[α Syn] / μ M	Protein Modifica- tions	Additives	pH	T / °C	Agitation	Time	PDB
Ni, X. <i>et al.</i> 2019	10 mM NaPi, 140 mM NaCl	100-300	N-term acetylation, C-term trunc: α Syn (1-103)		7.4	37	600 rpm	4-5 days	6OSM
Guerrero-Ferreira, R. <i>et al.</i> 2018	DPBS	360 μ M (5 mg/mL)	C-term trunc: α Syn (1-121)		7.0- 7.3	37	1,000 rpm	5 days	6H6B
Li, Y. <i>et al.</i> 2018	50 mM Tris, 150 mM KCl, 0.05% NaN ₃	500	N-term acetylation		7.5	37	900 rpm	3 days	6A6B
Sun, C. <i>et al.</i> 2023	15 mM tetrabutylphosphonium bromide	300	A53E			37		2 weeks	7UAK
Yany, Y. <i>et al.</i> 2023	PBS	130	MAAAEKT insertion after residue 22			37	200 rpm	4 days	8CEB, 8CE7
Huang, J. Y.-C. <i>et al.</i> 2023			A53T						7WNZ
Huang, J. Y.-C. <i>et al.</i> 2023			A53T	Calcium ions					7WO0
Sun, Y. <i>et al.</i> 2021	50 mM phosphate buffer, 50 mM NaCl, 0.05% NaN ₃	100	G51D	0.5 mol.% seeds	7	37	900 rpm	7 days	7E0F
Zhao, K. <i>et al.</i> 2020	50 mM Tris, 150 mM KCl	100	E46K	0.5 mol.% seeds	7.5	37	900 rpm	7 days	6L4S
Sun, Y. <i>et al.</i> 2020	D-PBS	100	A53T	1 vol.% seeds		37	1,000 rpm	7 days	6LRQ
Boyer, D. R. <i>et al.</i> 2020	15 mM tetrabutylphosphonium bromide	300	E46K			37	shaking	2 weeks	6UFR
Boyer, D. R. <i>et al.</i> 2019	15 mM tetrabutylphosphonium bromide	300	H50Q			37	shaking	2 weeks	6PEO, 6PES

Table S2. Details of α Syn fibrils formed *in vivo* that have structures reported on the PDB.^a

Study	Pathogenic Origin	PDB
Yang, Y. <i>et al.</i> 2023	JOS (SNCA mutation)	8BQV, 8BQW
Yang, Y. <i>et al.</i> 2022	Lewy fold (PD, PDD, DLB)	8A9L
Schweighauser, M. <i>et al.</i> 2020	MSA	6XYO, 6XYP, 6XYQ

^aJOS: Juvenile-onset synucleinopathy. SNCA: PD: Parkinson's disease. PDD: Parkinson's disease dementia. MSA: Multiple system atrophy.

Table S3. Details of α Syn fibrils formed using SAAs that have structures reported on the PDB.^a

Study	Pathogenic Origin of Seeds	Biosample	Seeding method	Monomer	PDB
Dhavale, D. D. <i>et al.</i> 2024	LBD	Brain tissue (caudate)	PMCA	α Syn (1-140)	8FPT
Frieg, B. <i>et al.</i> 2022	PD	Brain tissue (amygdala)	PMCA	N-term acetylated α Syn (1-140)	7OZG
Frieg, B. <i>et al.</i> 2022	MSA	Brain tissue (amygdala)	PMCA	N-term acetylated α Syn (1-140)	7OZH
Lövestam, S. <i>et al.</i> 2021	MSA	Brain tissue (putamen)	RT-QuIC	α Syn (1-140)	7NCA, 7NCG, 7NCH, 7NCI, 7NCJ, 7NCK
Sokratian, A. <i>et al.</i> 2022	HC	CSF	RT-QuIC	α Syn (1-140)	8CYR
Sokratian, A. <i>et al.</i> 2022	DLB	CSF	RT-QuIC	α Syn (1-140)	8CYS, 8CYT, 8CYV, 8CYW, 8CYX, 8CYY, 8CZ0, 8CZ1, 8CZ2, 8CZ3, 8CZ6
Fan, Y <i>et al.</i> 2023	PD (preclinical)	CSF	RT-QuIC	N-term acetylated α Syn (1-140)	8H03, 7V47
Fan, Y <i>et al.</i> 2023	PD (mid stage)	CSF	RT-QuIC	N-term acetylated α Syn (1-140)	7XO0, 7XO1, 7XO2, 7XO3
Fan, Y <i>et al.</i> 2023	PD (late stage)	CSF	RT-QuIC	N-term acetylated α Syn (1-140)	8HO4, 8HOS, 7V48, 7V49

^aLBD: Lewy body dementia. PMCA: Protein misfolding cyclic amplification. PD: Parkinson's disease. MSA: Multiple system atrophy. RT-QuIC: Real time quaking-induced conversion. HC: Healthy control. CSF: Cerebrospinal fluid. DLB: Dementia with Lewy bodies. PD: Parkinson's disease.

Table S4. Details of tau fibrils formed *in vitro* that have structures reported on the PDB. Blank entries indicate that no information was given.

Study	Protein	Protein Modifications	[tau]	Buffer	Additives	pH	T / °C	Agitation	Time	PDB
Zhang, W. <i>et al.</i> 2019	Tau (1-441)		3.0 mg/mL	30 mM MOPS, 1 mM AEBSF, 4 mM TCEP	heparin (400 µg/mL)	7.2	37		3 days	6QJM, 6QJH, 6QJP
Zhang, W. <i>et al.</i> 2019	Tau 2N3R (1-410)		3.0 mg/mL	30 mM MOPS, 1 mM AEBSF, 4 mM TCEP	heparin (400 µg/mL)	7.2	37		3 days	6QJQ
Louros, N. <i>et al.</i> 2024	Tau (350-362)		200 µM	5 mM HEPES, 10 mM KCl, 5 mM MgCl ₂ , 3 mM TCEP, 0.01% NaN ₃		7.2	rt		7 days	8OH2
Louros, N. <i>et al.</i> 2024	Tau (350-362)	N-terminal Fmoc	200 µM	5 mM HEPES, 10 mM KCl, 5 mM MgCl ₂ , 3 mM TCEP, 0.01% NaN ₃		7.2	rt		7 days	8OHI, 8OHP, 8OIO
Limorenko, G. <i>et al.</i> 2023	Tau (1-441)		100 µM	10 mM phosphate, 50 mM NaF, 0.5 mM DTT			37	100 rpm	24 h	8R3T
Duan, P. <i>et al.</i> 2023	Tau (297-391)		100 µM	10 mM phosphate buffer, 200 mM MgCl ₂ , 10 mM DTT, 0.02 wt% NaN ₃		5	37	150 rpm	3 days	8G58
Lövestam, S. <i>et al.</i> 2024	Tau (297-391)		592 µM (6 mg/mL)	10 mM phosphate buffer, 100 mM MgCl ₂ , 10 mM DTT		7.2	37	200 rpm	12 h	8Q2L, 8Q8E, 8Q8F, 8Q8L, 8Q8M, 8Q8R, 8Q8S, 8Q8C, 8QCP, 8Q27, 8Q2J, 8Q2K, 8Q7F, 8Q7L, 8Q7M, 8Q7T, 8Q88, 8Q8D, 8PPO, 8Q8U, 8Q8V, 8Q8W, 8Q8X, 8Q8Y, 8Q8Z, 8Q97, 8Q98, 8Q99, 8Q9A, 8Q9B, 8Q9C, 8Q9D, 8Q9E, 8Q9F, 8Q9G, 8Q9H, 8Q9I, 8Q9J, 8Q9K, 8Q9L, 8Q9M, 8Q9O, 8Q9R
Lövestam, S. <i>et al.</i> 2024	Tau (297-391)		592 µM (6 mg/mL)	50 mM phosphate buffer, 150 mM NaCl, 10 mM DTT		7.2	37	200 rpm	12 h	8Q9B, 8Q9C, 8Q9D, 8Q9E, 8Q9F, 8Q9G, 8Q9H, 8Q9I, 8Q9J, 8Q9K, 8Q9L, 8Q9M, 8Q9O, 8Q9R
Li, L. <i>et al.</i> 2023	Tau (263-280)	2nd and 3rd lysine residues acetylated	500 µM	1xPBS	25 µM ThT	7			7 days	8FNZ
El Mammeri, N. <i>et al.</i> 2023	Tau (198 to 399)		4.7 µM	1xPBS, 2 mM DTT	0.125 mg/mL heparin		24	50 rpm	3 days	8G54
El Mammeri, N. <i>et al.</i> 2023	Tau (198 to 399)		4.7 µM	1xPBS, 2 mM DTT	0.125 mg/mL heparin		12	55 rpm	3 days	8G55
Li, X. <i>et al.</i> 2022	Tau (266-391 (3R)) and Tau (297-391)		2 mg/mL	10 mM phosphate buffer, 20 mM DTT, 200 mM MgCl ₂		7.4	37	orbital shaking	48 h	7YMN
Li, X. <i>et al.</i> 2022	Tau (297-391)		2 mg/mL	10 mM phosphate buffer, 20 mM DTT, 200 mM MgCl ₂		7.4	37	orbital shaking	48 h	7YPG
Abskharon, R. <i>et al.</i> 2022	Tau (1-441)		50 µM	20 mM ammonium acetate	400 µg/mL RNA	7	37	shaking	3 days	7SP1
Lövestam, S. <i>et al.</i> 2021	Tau (297-394)		4 mg/mL	10 mM PB, 10 mM DTT		7.4		700 rpm	48 h	7QJX

Study	Protein	Protein Modifications	[tau]	Buffer	Additives	pH	T / °C	Agitation	Time	PDB
Lövestam, S. <i>et al.</i> 2021	Tau (266/297-391)		4 mg/mL	10 mM PB, 10 mM DTT, 20 mM MgCl ₂ , 100 mM NaCl		7.4		200 rpm	48 h	7QKJ
Lövestam, S. <i>et al.</i> 2021	Tau (258-391)		4 mg/mL	10 mM PB, 10 mM DTT, 0.1% NaN ₃		7.4		700 rpm	48 h	7QKH
Lövestam, S. <i>et al.</i> 2021	Tau (266/297-391)		4 mg/mL	10 mM PB, 10 mM DTT, 10 mM Na-HCO ₃ , 100 mM NaCl		7.4		200 rpm	48 h	7R4T
Lövestam, S. <i>et al.</i> 2021	Tau (266/297-391)		4 mg/mL	10 mM PB, 10 mM DTT, 200 mM KCl		7.4		200 rpm	48 h	7R5H
Lövestam, S. <i>et al.</i> 2021	Tau (297-391)		4 mg/mL	10 mM PB, 10 mM DTT		7.4		200 rpm	48 h	7QJV
Lövestam, S. <i>et al.</i> 2021	Tau (266/297-391)		4 mg/mL	10 mM PB, 10 mM DTT, 200 mM LiCl		7.4		200 rpm	48 h	7QJY
Lövestam, S. <i>et al.</i> 2021	Tau (266/297-391)		4 mg/mL	10 mM PB, 10 mM DTT, 200 mM LiCl		7.4		200 rpm	48 h	7QJZ
Lövestam, S. <i>et al.</i> 2021	Tau (297-394)		4 mg/mL	PBS, 10 mM DTT		7.4		700 rpm	48 h	7QK1
Lövestam, S. <i>et al.</i> 2021	Tau (300-391)		4 mg/mL	PBS, 10 mM DTT		7.4		700 rpm	48 h	7QK2
Lövestam, S. <i>et al.</i> 2021	Tau (258-391)		4 mg/mL	10 mM PB, 10 mM DTT		7.4		700 rpm	48 h	7QK3
Lövestam, S. <i>et al.</i> 2021	Tau (266/297-391)		4 mg/mL	10 mM PB, 10 mM DTT, 200 mM KCl		7.4		200 rpm	48 h	7QK5
Lövestam, S. <i>et al.</i> 2021	Tau (258-391)		4 mg/mL	10 mM PB, 10 mM DTT	300 µg/µL heparan sulphate	7.4		700 rpm	48 h	7QK6
Lövestam, S. <i>et al.</i> 2021	Tau (266/297-391)		4 mg/mL	10 mM PB, 10 mM DTT, 200 µM CuCl ₂		7.4		200 rpm	48 h	7QKF
Lövestam, S. <i>et al.</i> 2021	Tau (258-391)		4 mg/mL	10 mM PB, 10 mM DTT	5 mM phosphoglycerate	7.4		700 rpm	48 h	7QKG
Lövestam, S. <i>et al.</i> 2021	Tau (297-408)	S396D, S400D, T403D, S404D	4 mg/mL	10 mM PB, 10 mM DTT, 200 mM MgCl ₂		7.4		200 rpm	48 h	7QKI
Lövestam, S. <i>et al.</i> 2021	Tau (258-391)		4 mg/mL	10 mM PB, 10 mM DTT	5 mM phosphoglycerate	7.4		700 rpm	48 h	7QKK
Lövestam, S. <i>et al.</i> 2021	Tau (266/297-391)		4 mg/mL	10 mM PB, 10 mM DTT, 200 µM ZnCl ₂		7.4		200 rpm	48 h	7QKL
Lövestam, S. <i>et al.</i> 2021	Tau (266-391)	S356D	4 mg/mL	10 mM PB, 10 mM DTT, 200 mM NaCl		7.4		200 rpm	48 h	7QKM
Lövestam, S. <i>et al.</i> 2021	Tau (266/297-391)		4 mg/mL	10 mM PB, 10 mM DTT, 20 mM MgCl ₂ , 100 mM NaCl		7.4		200 rpm	48 h	7QKU
Lövestam, S. <i>et al.</i> 2021	Tau (266/297-391)		4 mg/mL	10 mM PB, 10 mM DTT, 10 mM MgSO ₄ , 100 mM NaCl		7.4		200 rpm	48 h	7QKV
Lövestam, S. <i>et al.</i> 2021	Tau (266-391)	S356D	4 mg/mL	10 mM PB, 10 mM DTT, 200 mM KCl		7.4		200 rpm	48 h	7QKW
Lövestam, S. <i>et al.</i> 2021	Tau (266/297-391)		4 mg/mL	10 mM PB, 10 mM DTT, 10 mM MgSO ₄ , 100 mM NaCl		7.4		200 rpm	48 h	7QKX
Lövestam, S. <i>et al.</i> 2021	Tau (0N4R)		4 mg/mL	PBS, 5 mM TCEP	5 mM L-phosphoserine	7.4		200 rpm	96 h	7QKY
Lövestam, S. <i>et al.</i> 2021	Tau (305-379)		4 mg/mL	10 mM PB, 10 mM DTT, 200 mM MgCl ₂		7.4		200 rpm	48 h	7QKZ
Lövestam, S. <i>et al.</i> 2021	Tau (266/297-391)		4 mg/mL	10 mM PB, 10 mM DTT, 10 mM MgSO ₄ , 100 mM NaCl		7.4		200 rpm	48 h	7QL0

Study	Protein	Protein Modifications	[tau]	Buffer	Additives	pH	T / °C	Agitation	Time	PDB
Lövestam, S. <i>et al.</i> 2021	Tau (266-391)		4 mg/mL	PBS, 10 mM DTT		7.4		200 rpm	48 h	7QL1
Lövestam, S. <i>et al.</i> 2021	Tau (244-391)		4 mg/mL	10 mM PB, 10 mM DTT, 5 mM Na ₄ P ₂ O ₇				200 rpm	76 h	7QL2
Lövestam, S. <i>et al.</i> 2021	Tau (266/297-391)		4 mg/mL	10 mM PB, 10 mM DTT, 200 mM NaCl		7.4		200 rpm	48 h	7QL3
Lövestam, S. <i>et al.</i> 2021	not specified		4 mg/mL							7QL4
Lövestam, S. <i>et al.</i> 2021	Tau (266/297-391)		4 mg/mL	10 mM PB, 10 mM DTT, 200 mM NaCl		7.4		200 rpm	48 h	7QJW
Seidler, P. M. <i>et al.</i> 2018.	KVQIINKKLD			Crystallisation						5V5B
Seidler, P. M. <i>et al.</i> 2018.	VQIINK			Vapour diffusion						5V5C
Wiltzius, J. J. W. <i>et al.</i> 2009	VQIVYK			Vapour diffusion						4NP8

Table S5. Details of tau fibrils formed *in vivo* that have structures reported on the PDB.^a

Study	Pathogenic Origin	Dominant tau isoform	PDB
Stern, A. M. <i>et al.</i> 2023	AD (PHF)	3R + 4R	8AZU
Fowler, S. L. <i>et al.</i> 2023 (bioRxiv)	AD (PHF)	3R + 4R	8BGV
Seidler, P. M. <i>et al.</i> 2022	AD (PHF)	3R + 4R	7UPE
Shi, Y. <i>et al.</i> 2021	AD (PHF)	3R + 4R	7NRQ
Arakhamia, T. <i>et al.</i> 2020	AD (PHF)	3R + 4R	6VHL
Falcon, B. <i>et al.</i> 2018	AD (PHF)	3R + 4R	6HRE
Fitzpatrick, A. W.P. <i>et al.</i> 2017	AD (PHF)	3R + 4R	5O3L
Fitzpatrick, A. W.P. <i>et al.</i> 2017	AD (PHF)	3R + 4R	5O3O ^b
Fowler, S. L. <i>et al.</i> 2023 (bioRxiv)	AD (PHF, from EV)	3R + 4R	8BGS
Falcon, B. <i>et al.</i> 2018	AD (SF)	3R + 4R	6HRF
Shi, Y. <i>et al.</i> 2021	AD (SF)	3R + 4R	7NRS, 7NRT
Arakhamia, T. <i>et al.</i> 2020	AD (SF)	3R + 4R	6VI3
Fitzpatrick, A. W.P. <i>et al.</i> 2017	AD (SF)	3R + 4R	5O3T
Hallinan, G. I. <i>et al.</i> 2021	PrP-CAA	3R + 4R	7MKF, 7MKG
Hallinan, G. I. <i>et al.</i> 2021	GSS	3R + 4R	7MKH
Lövestam, S. <i>et al.</i> 2024	CTE	3R + 4R	8QJJ
Falcon, B. <i>et al.</i> 2019	CTE	3R + 4R	6NWP, 6NWQ
Qj, C. <i>et al.</i> 2023	SSPE	3R + 4R	8CAQ, 8CAX
Schweighauser, M. <i>et al.</i> 2023	PiD	3R	8P34 ^c
Falcon, B. <i>et al.</i> 2018	PiD	3R	6GX5
Chang, A. <i>et al.</i> 2022	PSP	4R	7U0Z
Shi, Y. <i>et al.</i> 2021	PSP	4R	7P65
Shi, Y. <i>et al.</i> 2021	GGT	4R	7P66, 7P67, 7P68
Shi, Y. <i>et al.</i> 2021	LNT (GPT fold)	4R	7P6A, 7P6B, 7P6C
Shi, Y. <i>et al.</i> 2021	AGD	4R	7P6D, 7P6E
Arakhamia, T. <i>et al.</i> 2020	CBD	4R	6VH7
Arakhamia, T. <i>et al.</i> 2020	CBD	4R	6VHA
Zhang, W. <i>et al.</i> 2020	CBD	4R	6TJO, 6TJX

^aAD: Alzheimer's disease. PHF: Paired helical filament. SF: Straight filament. EV: Extracellular vesicle. PrP-CAA: Prion protein cerebral amyloid angiopathy. GSS: Gerstmann-Sträussler-Scheinker. CTE: Chronic traumatic encephalopathy. SSPE: Subacute sclerosing panencephalitis. CBD: Corticobasal degeneration. PiD: Pick's disease. PSP: Progressive supranuclear palsy. GGT: Globular glial tauopathy. LNT: Limbic-predominant neuronal inclusion body 4R tauopathy. GPT: GGT-PSP-Tau. AGD: Argyrophilic grain disease. ^b Pronase-treated. ^c ΔK281.

Table S6. Details of tau fibrils formed in mice or cells that have structures reported on the PDB.^a

Study	Pathogenic Origin	Dominant tau isoform	Notes	PDB
Schweighauser, M. <i>et al.</i> 2023	Transgenic mouse	4R	P301S	8Q92, 8Q96
Tarutani, A. <i>et al.</i> 2023	AD	3R + 4R	Seeded in SH-SY5Y cells	8ORE
Tarutani, A. <i>et al.</i> 2023	CBD	4R	Seeded in SH-SY5Y cells	8ORF, 8ORG

^aAD: Alzheimer's disease. CBD: Corticobasal degeneration.

Table S7. Details of tau fibrils formed *in vivo* with bound small molecule ligands that have structures reported on the PDB.^a

Study	Pathogenic Origin	Dominant tau isoform	Modification	PDB
Merz, G. E. <i>et al.</i> 2023	AD (PHF)	3R + 4R	Bound GTP-1	8F μ G
Shi, Y. <i>et al.</i> 2023	CTE	3R + 4R	Bound Flortaucipir	8BYN
Seidler, P. M. <i>et al.</i> 2022	AD (PHF)	3R + 4R	Bound EGCG	7UPF, 7UPG
Shi, Y. <i>et al.</i> 2021	AD (PHF)	3R + 4R	Bound APN-1607	7NRV
Shi, Y. <i>et al.</i> 2021	AD (SF)	3R + 4R	Bound APN-1607	7NRX

^aAD: Alzheimer's disease. PHF: Paired helical filament. SF: Straight filament. CTE: Chronic traumatic encephalopathy.

Table S8. Details of A β fibrils formed *in vitro* that have structures reported on the PDB. Blank entries indicate that no information was given.

Study	Protein	Protein Modifications	[A β] / μ M	Buffer	Additives	pH	T / °C	Agitation	Time	PDB
Frieg, B. <i>et al.</i> 2024	A β (1-40)		20	NaPi	600 μ M DMPG vesicles	6.5	37	Quiescent	1-2 days	8OVK, 8OVM, 8OWD, 8OWE, 8OWJ, 8OWK
Pfeiffer, P. B. <i>et al.</i> 2024	A β (1-40)		23 (0.1 mg/mL)	100 mM phosphate buffer		7.3	37		72	8OT1, 8OT3
Pfeiffer, P. B. <i>et al.</i> 2024	A β (1-40)		23 (0.1 mg/mL)	100 mM phosphate buffer	5% (w/w) A β fibrils extracted from AD meningeal tissue	7.3	37		72	8OT4
Yagi-Utsumi, M. <i>et al.</i> 2023	A β (1-40)		500	5 mM potassium phosphate buffer	GMI/DMPC vesicles	7.4				7Y8Q
Ghosh, U. <i>et al.</i> 2021	A β (1-40)		100	10 mM sodium phosphate buffer, 0.01% w/v NaN ₃	5-9% seeds from AD cortical tissue	7.4	24		2 days	6W0O
Cerofolini, L. <i>et al.</i> 2020	A β (1-40)		100	50 mM ammonium acetate		8.5	37	950 rpm	5 weeks	6TI5
Hu, Z. W. <i>et al.</i> 2019	A β (1-40)	Ser8-phosphorylated	50	20 mM phosphate buffer, 0.05% NaN ₃	10 mol.% seeds	7.4	37	quiescent	72 h	6OC9
Sgourakis, N. G. <i>et al.</i> 2015	A β (1-40)	D23N	100	10 mM phosphate buffer, 0.01% NaN ₃	10% seeds	7.4	4		4 hours	2MPZ
Schütz, A. K. <i>et al.</i> 2014	A β (1-40)	E22 Δ	60	10 mM phosphate buffer, 100 mM NaCl		7.4	37	700 rpm	80 min	2MVX
Cerofolini, L. <i>et al.</i> 2020	A β (1-40) + A β (1-42)		100	50 mM ammonium acetate		8.5	37	950 rpm	5 weeks	6TI6, 6TI7
Liu, D. <i>et al.</i> 2021	A β (1-42)	Tyr10 O-Glycosylation (Gal β 1-3GalNAc α)	200	1xPBS			37		3 days	7F29
Gremer, L. <i>et al.</i> 2017	A β (1-42)			30 vol.% MeCN in H ₂ O	0.1 vol.% TFA		rt	quiescent	8 weeks	5OQV
Xiao, Y. <i>et al.</i> 2015	A β (1-42)		50	10 mM phosphate buffer	5% (w/w) seeds	7.4	rt	slow rotation	1 day - 1 week	2MXU
Griner S. L. <i>et al.</i> 2019	A β (16-26)	D23N		Crystallisation: 0.1 M Tris, 0.2 M magnesium formate, 20% DMSO, 15% isopropanol		8	rt	quiescent	4 days - 2 weeks	6O4J
Warmack, R. A. <i>et al.</i> 2019	A β (20-34)	L-isoaspartate 23	1,600	Crystallisation: 50 mM Tris-HCl, 150 mM NaCl (TBS), 1% DMSO	2% seeds	7.6	37	shaken	2 days	6NB9
Warmack, R. A. <i>et al.</i> 2019	A β (20-34)		3,200	Crystallisation: 50 mM Tris-HCl, 150 mM NaCl (TBS), 1% DMSO	2% seeds	7.5	37	shaken	2 days	6OIZ
Krotee, P. <i>et al.</i> 2017	A β (24-34)		1,700 (10 mg/mL)	Crystallisation: 25 mM citric acid, 5% DMSO		4	37	shaking	2 days - 1 week	5VOS
Do, T. D. <i>et al.</i> 2018	A β (19-24)		2,300 (10 mg/mL)	Hanging-drop crystallisation: 0.2 M Ammonium nitrate, 20% w/v Polyethylene glycol 3,350					2-3 days	5TXD
Do, T. D. <i>et al.</i> 2018	A β (27-32)		2,300 (10 mg/mL)	Hanging-drop crystallisation: .2 M Potassium phosphate dibasic, 20% w/v Polyethylene glycol 3,350					2-3 days	5TXJ

Table S9. Details of A β fibrils formed *in vivo* that have structures reported on the PDB.^a

Study	Protein	Protein Modifications	Pathological origin	PDB
Fu, Z. <i>et al.</i> 2024	A β (1-40)		CAA (vessels in brain cortices)	8FF2
Fu, Z. <i>et al.</i> 2024	A β (1-40)	E22Q	CAA (familial Dutch-type) (vessels in brain cortices)	8FF3
Yang, Y. <i>et al.</i> 2023	A β (1-40)		AD and CAA (leptomeninges)	8QN6, 8QN7
Yang, Y. <i>et al.</i> 2023	A β (1-42)	E22G	AD (frontal cortex)	8BFZ
Yang, Y. <i>et al.</i> 2023	A β (1-40)	E22G	AD (frontal cortex)	8BG0
Stern, A. M. <i>et al.</i> 2023	A β (1-42)		AD (cortex)	8AZS, 8AZT
Yang, Y. <i>et al.</i> 2022	A β (1-42)		AD (frontal cortex)	7Q4B
Yang, Y. <i>et al.</i> 2022	A β (1-42)		Pathological aging (PA) (frontal cortex)	7Q4M
Kollmer, M. <i>et al.</i> 2019	A β (1-40)		AD (meningeal)	6SHS
Lu, J.-X. <i>et al.</i> 2013	A β (1-40)		AD (grey matter)	2M4J

^a AD: Alzheimer's disease. CAA: Cerebral amyloid angiopathy. PA: Pathological aging.

Table S10. Details of A β fibrils formed *in vivo* in transgenic mouse models that have structures reported on the PDB.

Study	Protein Modifications	Pathological origin	PDB
Zielinski, M. <i>et al.</i> 2023		Transgenic mouse (APP23)	8OL2
Zielinski, M. <i>et al.</i> 2023		Transgenic mouse (APP/PS1)	8OL3
Zielinski, M. <i>et al.</i> 2023		Transgenic mouse (ARTE10)	8OL5, 8OLO
Zielinski, M. <i>et al.</i> 2023		Transgenic mouse (tgAPP ^{Swe})	8OL6
Zielinski, M. <i>et al.</i> 2023	E22G	Transgenic mouse (tg-APP ^{ArcSwe})	8OL7
Zielinski, M. <i>et al.</i> 2023	E22Q, D23N	Transgenic mouse (tg-SwDI)	8OLG, 8OLN, 8OLQ
Leistner, C. <i>et al.</i> 2023	E22G	Transgenic mouse (App NL-G-F)	8BFA, 8BFB
Yang, Y. <i>et al.</i> 2023	E22G	Transgenic mouse (App NL-G-F)	8BG9

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