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(54) **Title:** COMPOSITIONS AND METHODS FOR PROPHYLAXIS AND/OR TREATMENT OF ALPHA SYNUCLEIN PROTEINOPENIA IN PARKINSON'S AND OTHER DISEASES

N-terminal Domain = MDVFMKGLSKAKEGVVAAAEKTKQGVAEAGKTEGVLVYVGSKTEGVVHGVATVAEKT
C-terminal Domain = KKDQLGKNEEGAPQEGILEDMPVDPDNEAYEMPSEEGYQDYEPEA

Name	NT	Positions 1-60	Positions 61-95	Positions 96-140	CT
SEQ ID NO:1	H	N-terminal Domain	EQVTNVGGAVVTGVTAVAQKTVEGAGSIAAATGFV	C-terminal Domain	OH
SEQ ID NO:2	H	N-terminal Domain	EQVTNVGGAVVTGVTAVAQKTVEGAGSIAAATGF	C-terminal Domain	OH
SEQ ID NO:3	H	N-terminal Domain	EQVTNVGGAVVTGVTAVAQKTVEGAGSIAAATG	C-terminal Domain	OH
SEQ ID NO:4	H	N-terminal Domain	EQVTNVGGAVVTGVTAVAQKTVEGAGSIAAAT	C-terminal Domain	OH
SEQ ID NO:5	H	N-terminal Domain	EQVTNVGGAVVTGVTAVAQKTVEGAGSIAAA	C-terminal Domain	OH
SEQ ID NO:6	H	N-terminal Domain	EQVTNVGGAVVTGVTAVAQKTVEGAGSIAA	C-terminal Domain	OH
SEQ ID NO:7	H	N-terminal Domain	EQVTNVGGAVVTGVTAVAQKTVEGAGSIA	C-terminal Domain	OH
SEQ ID NO:8	H	N-terminal Domain	EQVTNVGGAVVTGVTAVAQKTVEGAGSI	C-terminal Domain	OH
SEQ ID NO:9	H	N-terminal Domain	EQVTNVGGAVVTGVTAVAQKTVEGAGS	C-terminal Domain	OH
SEQ ID NO:10	H	N-terminal Domain	EQVTNVGGAVVTGVTAVAQKTVEGAG	C-terminal Domain	OH
SEQ ID NO:11	H	N-terminal Domain	EQVTNVGGAVVTGVTAVAQKTVEGA	C-terminal Domain	OH
SEQ ID NO:12	H	N-terminal Domain	EQVTNVGGAVVTGVTAVAQKTVEG	C-terminal Domain	OH
SEQ ID NO:13	H	N-terminal Domain	EQVTNVGGAVVTGVTAVAQKTVE	C-terminal Domain	OH
SEQ ID NO:14	H	N-terminal Domain	EQVTNVGGAVVTGVTAVAQKT	C-terminal Domain	OH
SEQ ID NO:15	H	N-terminal Domain	EQVTNVGGAVVTGVTAVAQ	C-terminal Domain	OH
SEQ ID NO:16	H	N-terminal Domain	EQVTNVGGAVVTGVTAVA	C-terminal Domain	OH
SEQ ID NO:17	H	N-terminal Domain	EQVTNVGGAVVTGVT	C-terminal Domain	OH
SEQ ID NO:18	H	N-terminal Domain	EQVTNVGGAVVTG	C-terminal Domain	OH
SEQ ID NO:19	H	N-terminal Domain	EQVTNVGGAVVT	C-terminal Domain	OH
SEQ ID NO:20	H	N-terminal Domain	EQVTNVGGAV	C-terminal Domain	OH
SEQ ID NO:21	H	N-terminal Domain	EQVTNVGG	C-terminal Domain	OH
SEQ ID NO:22	H	N-terminal Domain	EQVTNV	C-terminal Domain	OH
SEQ ID NO:23	H	N-terminal Domain	EQVTN	C-terminal Domain	OH
SEQ ID NO:24	H	N-terminal Domain	EQVT	C-terminal Domain	OH

FIG. 1A

(57) **Abstract:** Material compositions and/or methods useful for the prophylaxis and/or treatment of a-syn protein depletion (proteinoenia) are provided, including material compositions that retain native function of a-syn protein while limiting and/or preventing amyloid formation and/or aggregation of said protein. Material compositions and formulations for enhancing protein solubility, stability, circulation time, receptor interaction, brain penetrance, CSF half-life, and for facilitating peptide/protein synthesis and purification are also provided.

[Continued on next page]

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