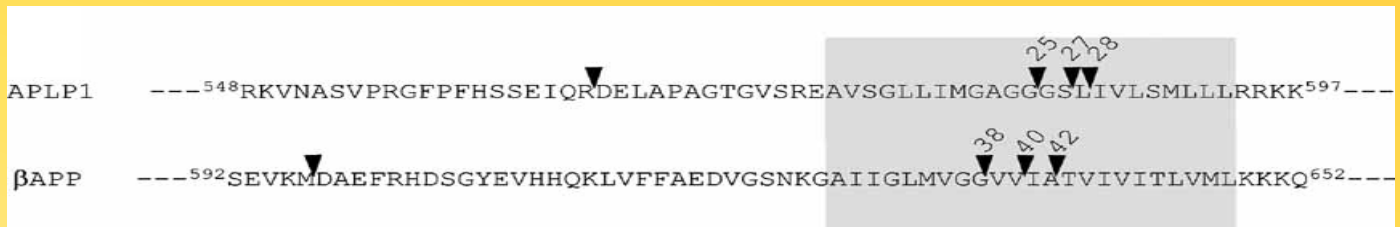


APL1-derived Peptides: Alzheimer's Biomarkers

The 28-amino acid form of an APLP1-derived A-like peptide is a surrogate marker for A42 production in the central nervous system

Surrogate markers for the Alzheimer disease (AD)-associated 42-amino acid form of amyloid- (A42) have been sought because they may aid in the diagnosis of AD and for clarification of disease pathogenesis. Here, we demonstrate that human cerebrospinal fluid (CSF) contains three APLP1-derived A-like peptides (APL1) that are generated by - and -cleavages at a concentration of 4.5 nM. These novel peptides, APL125, APL127 and APL128, were not deposited in AD brains. Interestingly, most -secretase modulators (GSMs) and familial AD-associated presenilin1 mutants that up-regulate the relative production of A42 cause a parallel increase in the production of APL128 in cultured cells. Moreover, in CSF from patients with pathological mutations in presenilin1 gene, the relative APL128 levels are higher than in non-AD controls, while the relative A42 levels are unchanged or lower. Most strikingly, the relative APL128 levels are higher in CSF from sporadic AD patients (regardless of whether they are at mild cognitive impairment or AD stage), than those of non-AD controls. Based on these results, we propose the relative level of APL128 in the CSF as a candidate surrogate marker for the relative level of A42 production in the brain.

Yanagida, Okochi et. al. *EMBO Molecular Medicine*, Volume 1, Issue 4, Pages 223-235. Published Online: 11 Jun 2009



A diagram of the APL1 and A domains in APLP1 and APP sequences, respectively. Arrowheads and the grey boxes indicate cleavage sites and the deduced TM, respectively. The numbers above the arrowheads indicate the number of amino acid residues in each fragment.

Catalog Number	Product Name	Standard Size
018-40	APL 1beta-25	100 µg
018-41	APL 1beta-27	100 µg
018-42	APL 1beta-28	100 µg
EK-018-42	APL 1beta-28 - EIA Kit	1 Kit
FEK-018-42	APL 1beta-28 - Fluorescent EIA Kit	1 Kit
018-43	APL 1beta-28 (1-14) [Cys14]	100 µg
018-01	Amyloid beta-Protein (1-40) (Human)	200 µg
018-07	Amyloid beta-Protein (1-42) (Human)	200 µg
018-06	Amyloid beta-Protein (1-43) (Human)	200 µg



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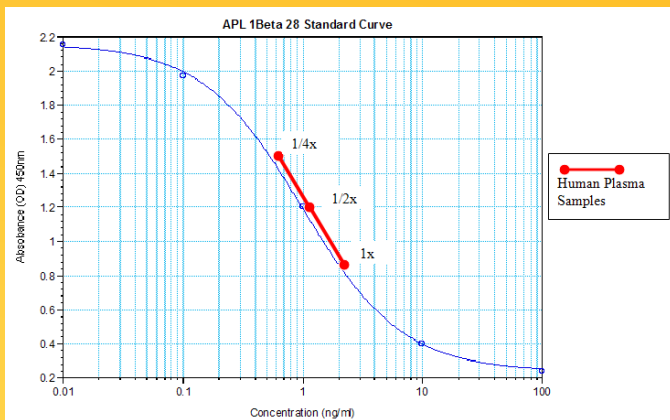
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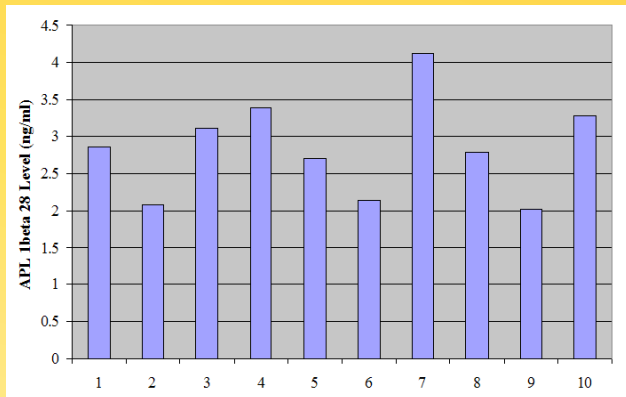
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EK-018-42 - APL 1Beta 28 EIA Kit

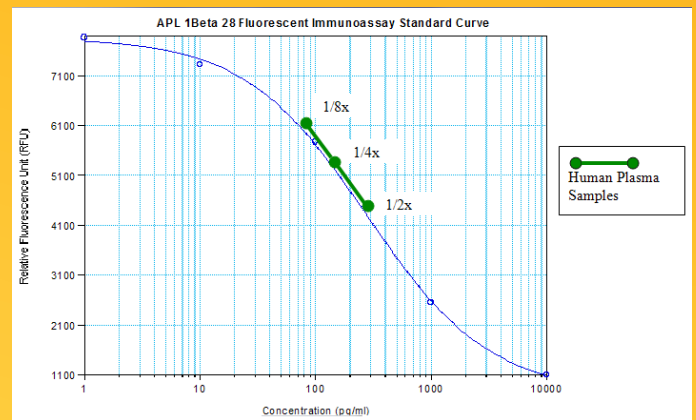


Standard Range: 0.01-100 ng/ml
Minimum Detection : 0.29 ng/ml
Linear Range: 0.29-5.5 ng/ml
ED50: 0.996 ng/ml

Measured Levels in Human Plasma Samples with EK-018-42: 2.0-4.1 ng/ml (n=10)

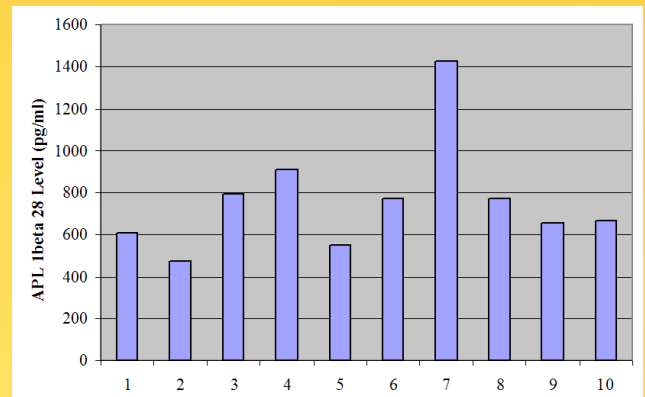


FEK-018-42 - APL 1Beta 28 Fluorescent Kit

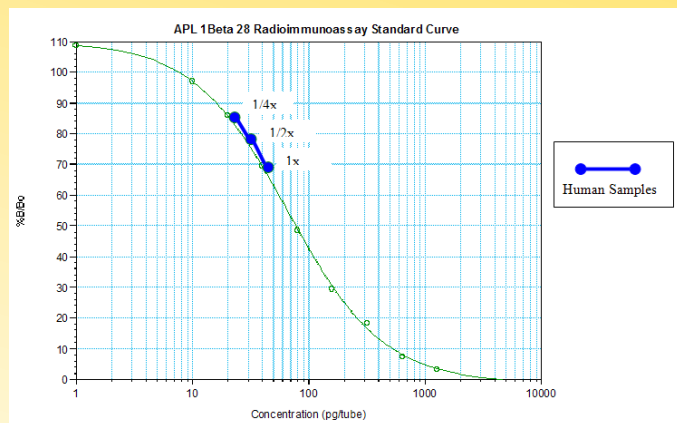


Standard Range : 1-10000 pg/ml
Minimum Detection : 51 pg/ml
Linear Range: 51-1125 pg/ml
ED50: 279 pg/ml

Measured Levels in Human Plasma Samples with FEK-018-42: 475-1425 pg/ml (n=10)



RK-018-42 - APL 1Beta 28 RIA Kit



Standard Range : 100-12800 pg/ml
Minimum Detection : 200 pg/ml
ED50: 660 pg/ml
Measured Levels Human Plasma: 490-560 pg/ml (n=20)

Cross Reactivity Data

Peptide	%Cross-reactivity
APL 1β-28	100
APL 1β-27	72
APL 1β-28 (1-14)	0
Amyloid b-Protein (1-40)	0
Amyloid b-Protein (1-42)	0
Amyloid b-Protein (1-43)	0