StressMarq Biosciences INC.

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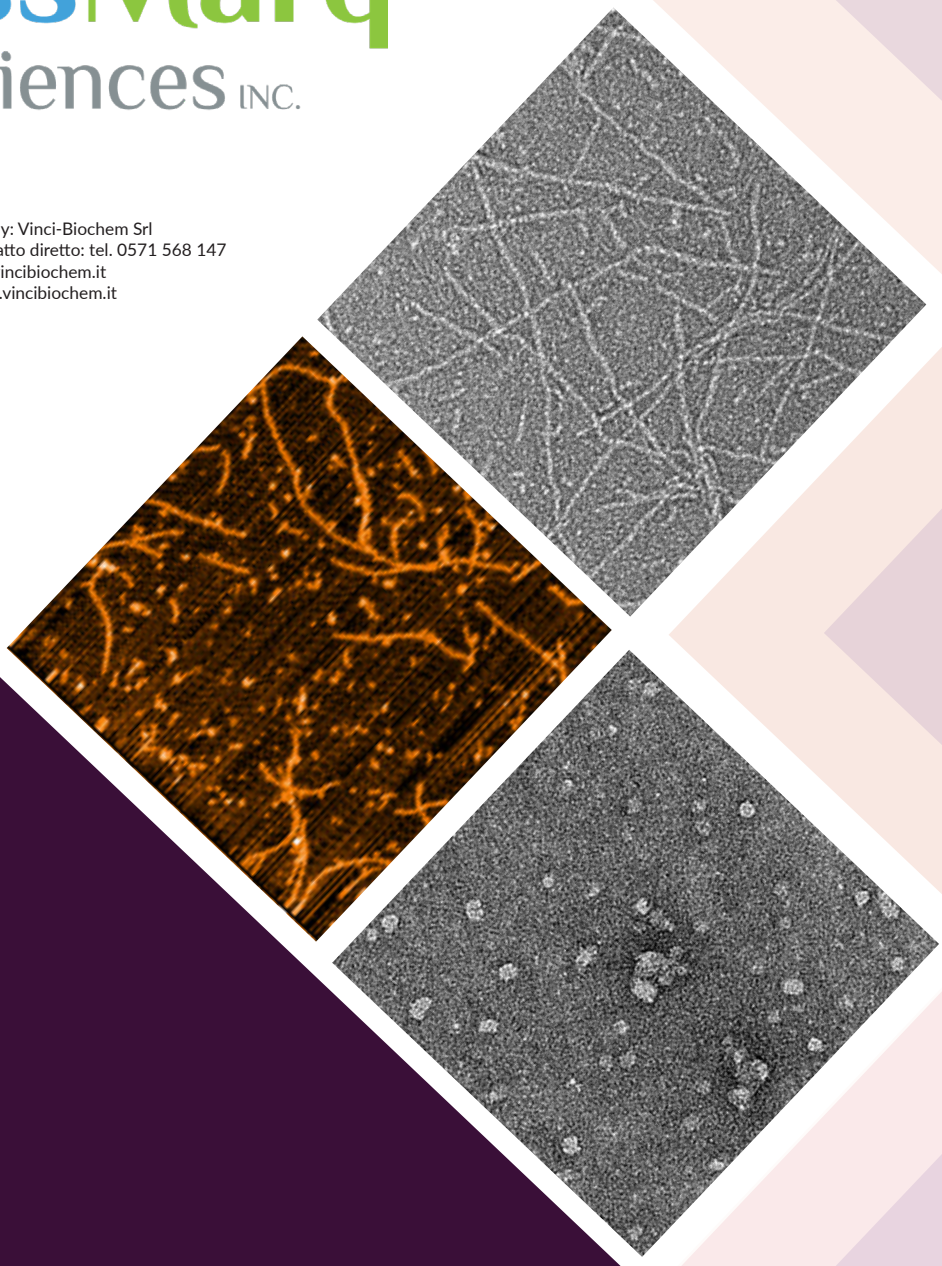


Amyloid Beta

Pre-formed Fibrils | Oligomers | Monomers | Antibodies

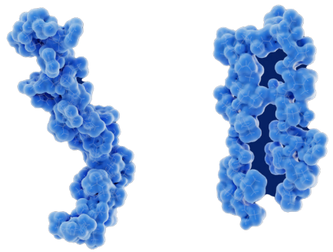
Amyloid Beta Protein Citations

stressmarq.com/amyloid-beta

Pre-formed Fibrils | Oligomers | Monomers

Role of Amyloid Beta in Neurodegeneration

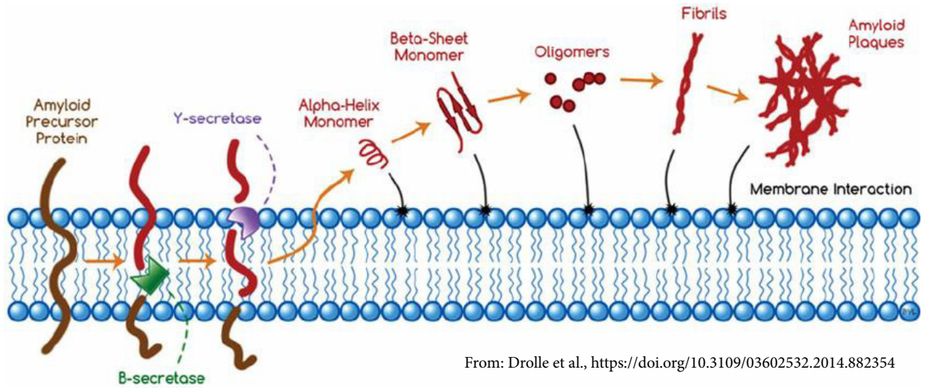
- Amyloid beta (Aβ) peptide is the main component of amyloid plaques found in the brain of Alzheimer's disease patients
- Amyloid beta has been shown to aggregate into oligomeric and fibrillary forms which contribute to disease progression
- Soluble amyloid beta oligomers are the most toxic species and responsible for synaptic dysfunction
- Co-pathogenic interaction between amyloid beta and tau drives Alzheimer's disease progression
- Amyloid beta deposition is also associated with cognitive decline in Parkinson's disease



Left: Amyloid Beta Protein **Right**: Misfolded Form

Amyloid beta plays a significant role in neurodegenerative diseases.
Additional research tools and new models are needed to better understand and develop treatments for these diseases.

Amyloid Beta Aggregation Mechanism

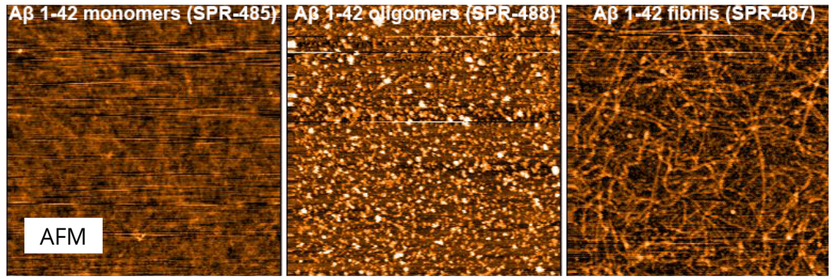


From: Drolle et al., https://doi.org/10.3109/03602532.2014.882354

- *Amyloid beta monomers aggregate into oligomers, protofibrils and finally form amyloid beta fibrils*
- *Amyloid fibrils are larger and insoluble, and they can further assemble into amyloid plaques*
- *Soluble amyloid oligomers are the most neurotoxic aggregates causing neuronal death*
- *Pyroglutamate Aβ 3-42 exhibits higher aggregation propensity and neurotoxicity compared with full length Aβ 1-42*
- *Therapies targeting toxic amyloid beta oligomers might be the key to an effective treatment*

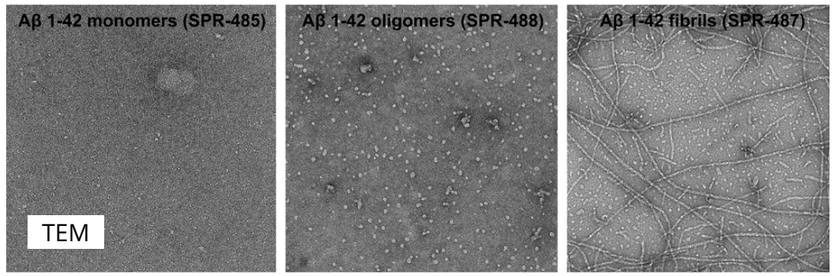
Pre-formed Fibrils | Oligomers | Monomers

Fibrillar and Oligomeric Structure of Amyloid Beta



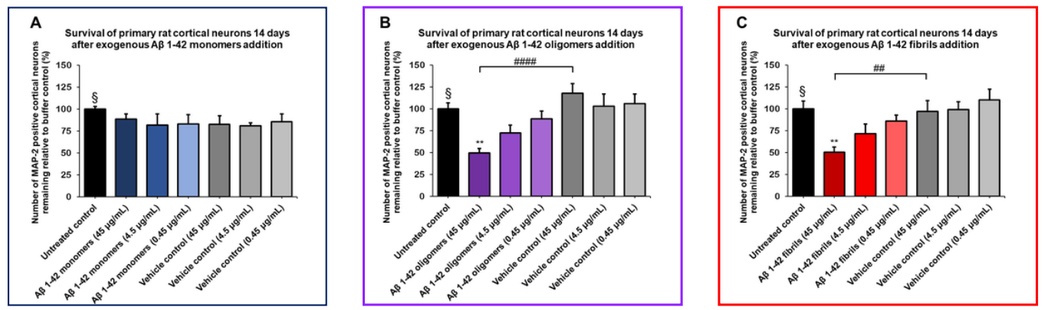
StressMarq's Amyloid Beta 1-42 PFFs (catalog# SPR-487) present as long strands when observed under TEM and AFM, and have a unique high molecular weight on a Western Blot with an anti-amyloid beta antibody.

StressMarq's Amyloid Beta 1-42 Oligomers (catalog# SPR-488) present as globular oligomers when observed under TEM and AFM, and have a unique dimer/ trimer and oligomer signal on a Western Blot with an anti-amyloid beta antibody.



Amyloid Beta Fibrils and Oligomers Induce Toxicity

StressMarq's Amyloid Beta 1-42 Oligomers (catalog# SPR-488) and Amyloid Beta 1-42 PFFs (catalog# SPR-487) show a ***dose-dependent toxicity to primary rat cortical neurons***. Amyloid Beta Monomers (catalog# SPR-485) are not toxic.
The charts below show survival of rat primary cortical neurons 14 days after treatment with different concentrations of (A) monomers, (B) oligomers or (C) fibrils quantified by MAP2 positive neurons and expressed as a percentage of control. Fibrils and respective vehicle controls were initially sonicated in a Bioruptor. Test conditions were run in the same plate as untreated control and vehicle controls, which consisted of buffer without amyloid beta 1-42.



Monomers **Oligomers** **Pre-formed Fibrils**

*Data expressed as mean +/- s.e.m. (n=6). A global analysis of the data was performed using a one-way ANOVA followed by Dunnett's test; ** p<0.01 stats vs control; ## p<0.01, #### p<0.0001 stats vs vehicle control. § represents untreated control condition.*

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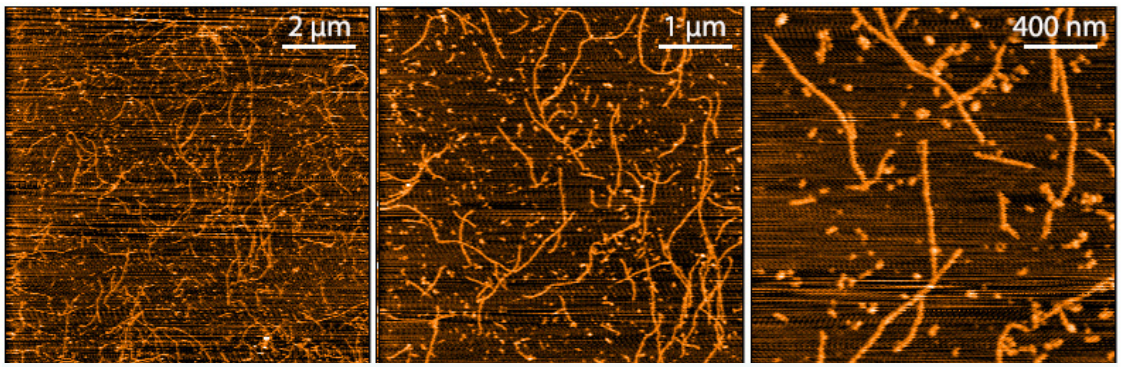
Pre-formed Fibrils | Oligomers | Monomers

Pyroglutamate Amyloid Beta 3-42 Pre-formed Fibrils (PFFs)



AFM (atomic force microscopy) of Amyloid Beta Pyroglutamate 3-42 Fibrils (catalog# SPR-492).
1.0 mg/mL samples diluted to 0.1 mg/mL in 2% DMSO + 10 mM HCl, mounted on freshly cleaved mica, washed, dried and analyzed with tapping mode.

Pyroglutamate Amyloid Beta 3-42, a highly amyloidogenic and neurotoxic form of amyloid beta, is N-terminally truncated to form a pyroglutamate and has recently been proposed as a potential key target for immunotherapy.

Product Description	Catalog#	Sizes
Human Amyloid Beta 1-42 Pre-formed Fibrils (PFFs)	SPR-487	100ug / 200ug / 500ug
Human Amyloid Beta Pyroglutamate 3-42 Pre-formed Fibrils (PFFs)	SPR-492	100ug / 200ug / 500ug
Human Amyloid Beta 1-42 Oligomers	SPR-488	100ug / 200ug / 500ug
Human Amyloid Beta Peptide 1-42 (HFIP, monomeric)	SPR-485	100ug / 500ug / 1mg

Amyloid Beta Antibodies

Product Description	Type	Host	Applications	Reactivity	Catalog#
Amyloid Fibrils (OC) Antibody	Polyclonal	Rabbit	WB, IHC, ICC/IF, IP, ELISA, DB	Hu	SPC-507
Amyloid Oligomers (A11) Antibody	Polyclonal	Rabbit	WB, IHC, ICC/IF, IP, ELISA, DB	Hu, Ms, Rt, Eu	SPC-506
Amyloid Beta 1-42 Oligomer Antibody ***NEW!***	Monoclonal	Rabbit	WB, DB, ELISA	Hu	SMC-618
Amyloid Beta 1-42 Oligomer Antibody ***NEW!***	Monoclonal	Rabbit	WB, DB, ELISA	Hu	SMC-619
Amyloid Beta 1-42 Oligomer Antibody ***NEW!***	Monoclonal	Rabbit	WB, DB, ELISA	Hu	SMC-620

Amyloid Beta Oligomer ELISA Kit

Coming Soon!

Product Description	Catalog#
Amyloid Beta Oligomer ELISA Kit ***COMING SOON!***	SKT-142

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