Helping to accelerate AD therapy development with a Proprietary Blood Test for Alzheimer's Disease (AD)

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www.nanosomix.com

NanoSomiX, Inc. (NSX)

Mission:

- Commercialize a blood test for identification and monitoring of AD and other neurologic disorders

Technology:

- Enrich and analyze brain derived biomarkers contained in Neural Derived Exosomes (NDE's)

Goal:

- Provide investigators and therapy developers with a simple blood test to assess and monitor AD and other neurodegenerative diseases to speed development of effective therapies

Business Overview

Company Formation:

- Founded in 2014 based on work by Dr. Ed Goetzl

Business Model:

- Service Lab

Intellectual Property:

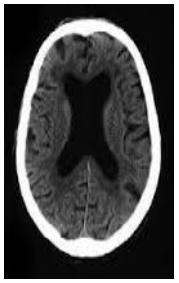
- 4 patents pending

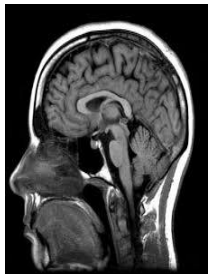
Funding:

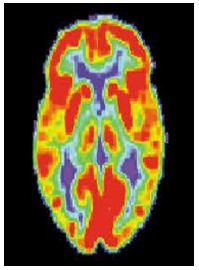
- Angel Funding to date
- Series A planned for late 2017/early 2018

Current Neurodegenerative Disease Diagnostics

Biopsy: *Not Possible*







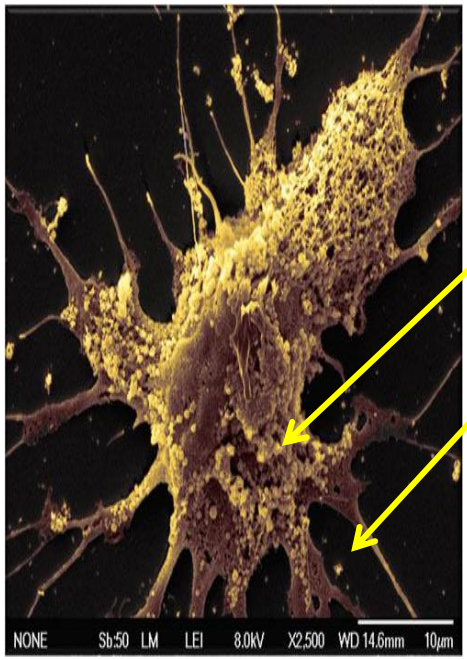
CT MRI PET

Image analysis:
Too Expensive!
($5K+)

Cerebrospinal fluid:
Too Invasive! ($2K+)

Current diagnostic techniques aren't practical for routine testing

NanoSomiX' technology selectively enriches blood NDE's using proprietary L1-Cam immunoaffinity technology and measures inclusive pathogenic AD proteins and biomarkers **"Window to the Brain"**



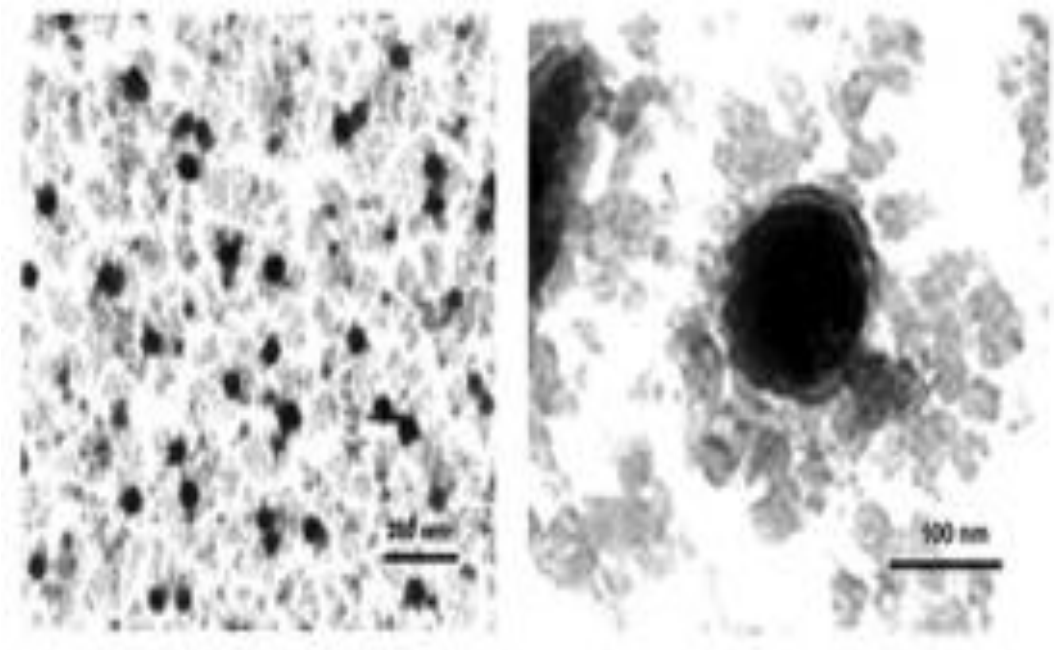
Johan Skog,
http://www.genengnews.com/

Exosomes:
Micro vesicles containing numerous biomarkers

WHY VALUABLE?

- Neural Derived Exosomes (NDE's) cross blood brain barrier into blood
- Contents protected from degradation in blood by membrane

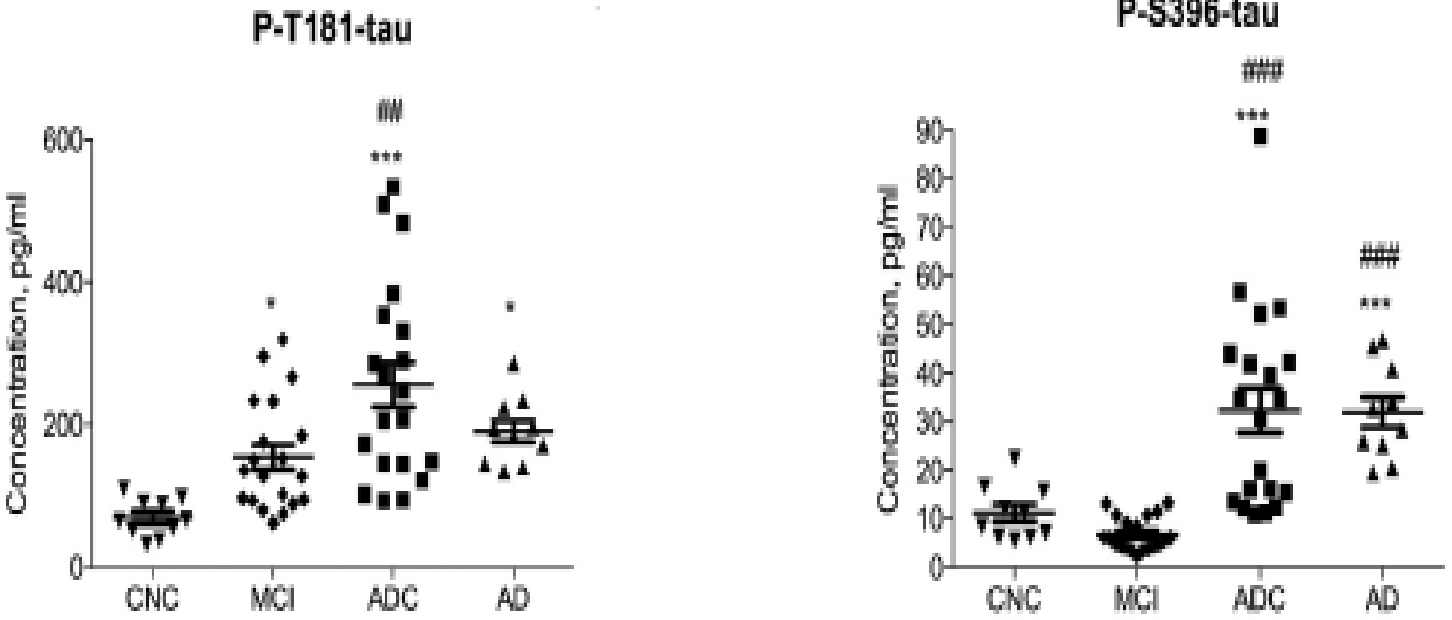
AD and MCI Patient NDEs Following Enrichment



- NDEs average ~ 7 to 10 X 10^{11} particles per ml in patients
- AD & MCI NDEs average 89.75 ± 2.15 & 94.5 ± 4.48 nm in size

Winston, et.al. Alzheimer's & Dementia, 2016

NDE P-T181 and P-S396 Tau Following MCI Conversion to AD

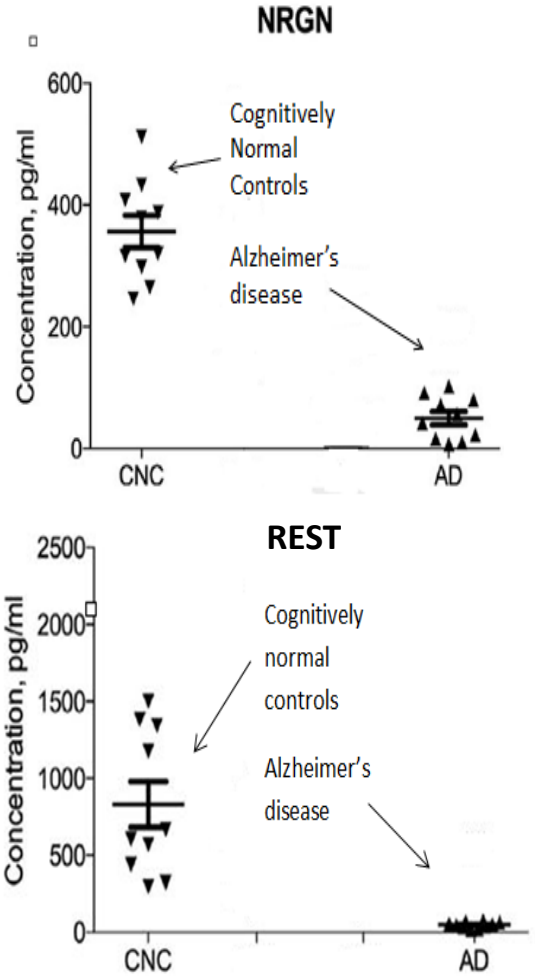


CNC= Controls (MMSE 27-30; CSF Aβ1 >190mg/ml)
MCI= Minimal Cognitive Impairment (MMSE >24, intact ADL)
ADC= MCI transitioned to AD over 36 months
AD= Alzheimer's Disease (MMSE<20, Aβ1 <190mg/ml)

- **Elevated NDE P-T181-tau & P-S396-tau correlate with advancing disease***
- **Elevated blood NDE pTau levels observed up to 10 yrs prior to clinical AD****

*Winston, et.al. Alzheimer's & Dementia, 2016
**Fiandaca et. al. Alzheimer's & Dementia 2014

Blood NDE Assay Applicable to Multiple Biomarkers



PLATFORM POTENTIAL:

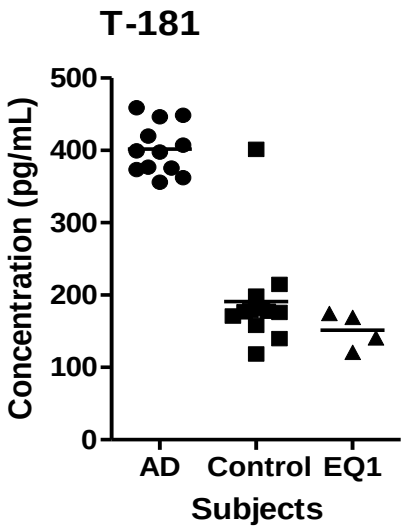
Additional NDE markers further differentiate AD from Control:

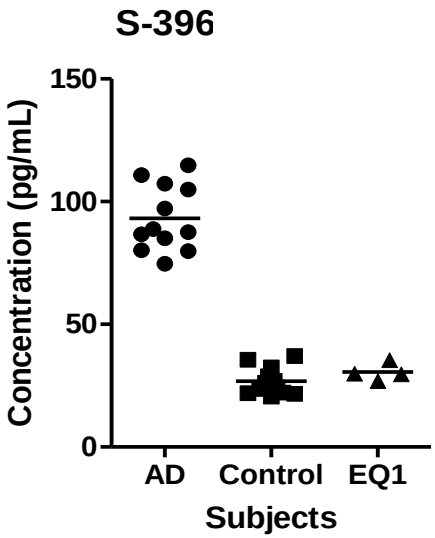
- ⇓ Synaptic proteins
- ⇑ Cathepsin D
- ⇓ Insulin resistance
- ⇓ GAP43 (growth assoc. protein 43)
- ⇑ Ubiquitin
- ⇑ LAMP1 (lysosome Assoc. membrane protein 1

Winston, et.al., Alzheimer's & Dementia, 2016
Goetzel et al. FASEB, 2016
Goetzel et.al. Acad. Neurology, 2015
Kapogiannis et al, FASEB 2015

NRGN= Neurogranin (post synaptic nerve transmission)
REST= Repressor Element Silencing Transcription Factor (neuron Survival)

Example of NSX Testing of AD & Control Plasma





Potential Clinical Application:

- Testing with well defined AD & Control plasma at NSX parallels published data
- NSX NDE assay measures 4 key pathologic biomarkers in plasma: P-T181-tau, T-S396-tau, Aβ1-42, & Tau

AD :
- MMSE ≤ 28 (range 22-28), abnormal CSF Aβ1-42 levels
- Ages 67-82; half male-half female

Controls:
- Age and gender matched
- MMSE normal 3 to 5 years prior

EQ1:
- Normal plasma process control

NSX Direct™ Product Status

- Finalizing RUO certification in CLIA Lab
- Current tests: NDE content of Aβ1-42, Tau, p-tau T181 and p-tau S396
- Expansion of RUO NDE biomarkers in progress
- Working with several companies to test potential disease and treatment applications

Going Forward:

- Expand control and AD patient database to establish biomarker range and applicability
- Seeking partners to explore multiple neurologic disease applications
- Transition to LDT to support identification and monitoring of AD and other neurologic disorders

Thank You

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