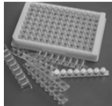


Stimuli-responsive reagents enable rapid biomarker capture and separation

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Evolution of Immunoassay Supports – Where are the magnetic nanoparticles?



96-Well Plates

VS



Current Magnetic Microbeads (2 μm)

VS

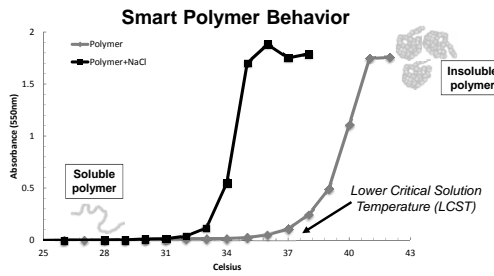


Magnetic Nanoparticles (0.02 μm)

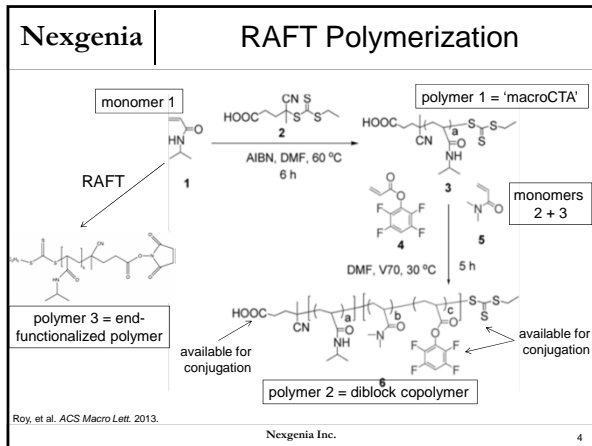
Surface Area/Volume	Lowest	Lower	100X Higher
Diffusion	None	Slower	1000X faster
Magnetic Separation	None	Rapid	Slow or N/A
Assay Time	Hours-days	~Hour	Minutes

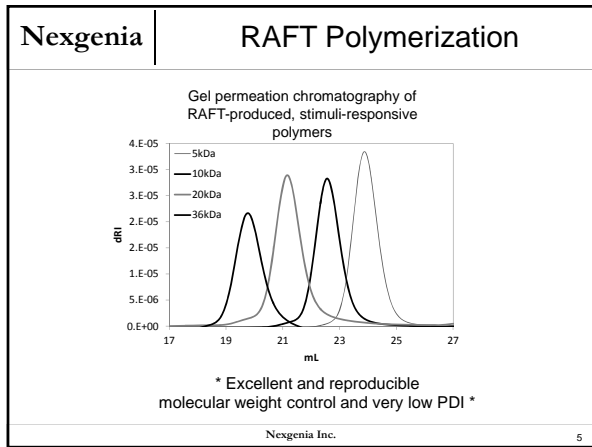
Nanoparticles offer advantages – if separation issues can be addressed

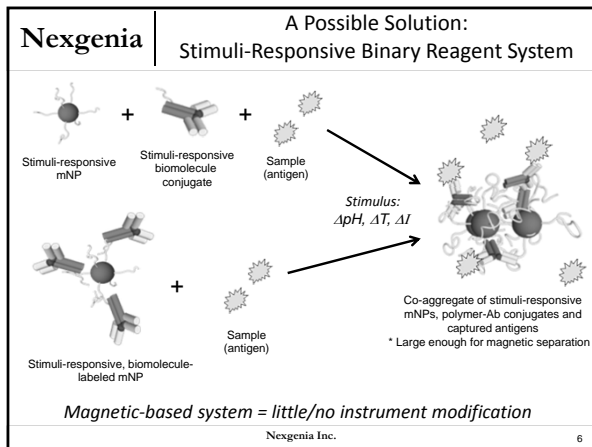
Stimuli-responsive, 'Smart' Polymers

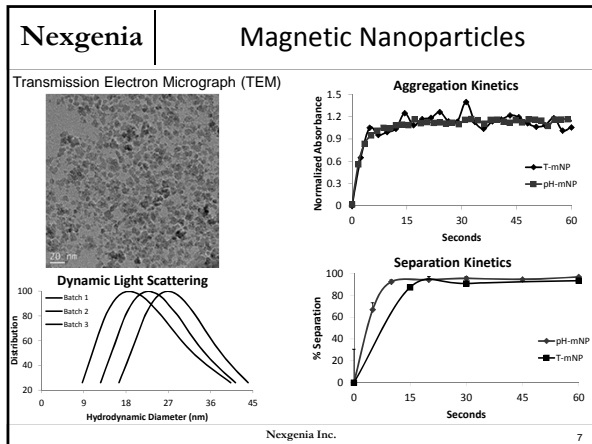


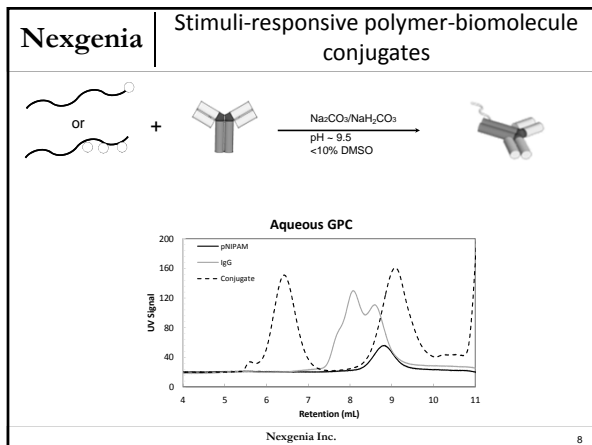
* Sharp and significant response to small stimulus *

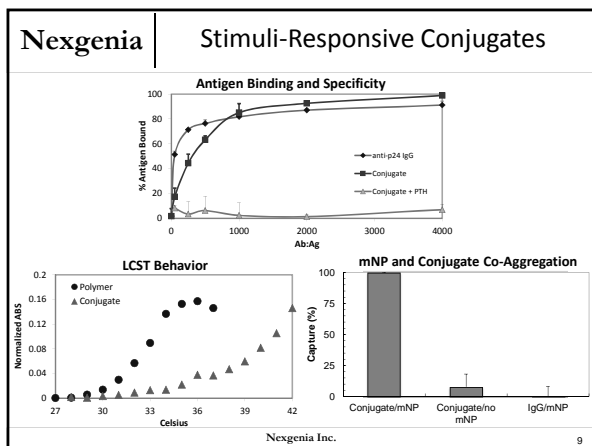


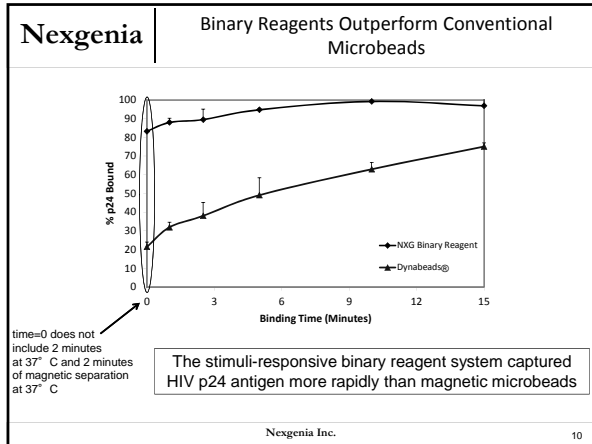


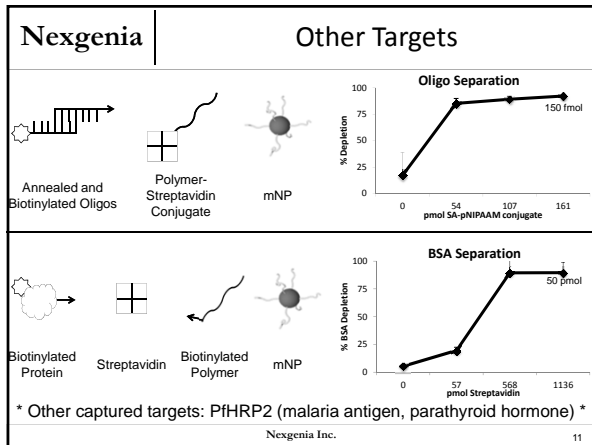












- ### Nexgenia Conclusions
- Reagent system consists of stimuli-responsive biomolecules and magnetic nanoparticles
 - Many chemistries available to make stimuli-responsive polymer-biomolecule reagents
 - Technology amenable to diverse targets/antigens
 - Magnetic nanoparticles and polymer conjugates respond to stimuli in seconds for complete magnetic separation of targets in < 2 minutes
- Nexgenia Inc. 12

- Co-authors and collaborators
 - Thomas H. Schulte, Nexgenia
 - Debashish Roy, Yen-chi Chen, James J. Lai, Patrick S. Stayton, University of Washington, Seattle, WA
- Funding
 - NIH, LSDF, UW C4C, Coulter Foundation
- For more information
 - Poster presentation this evening #749