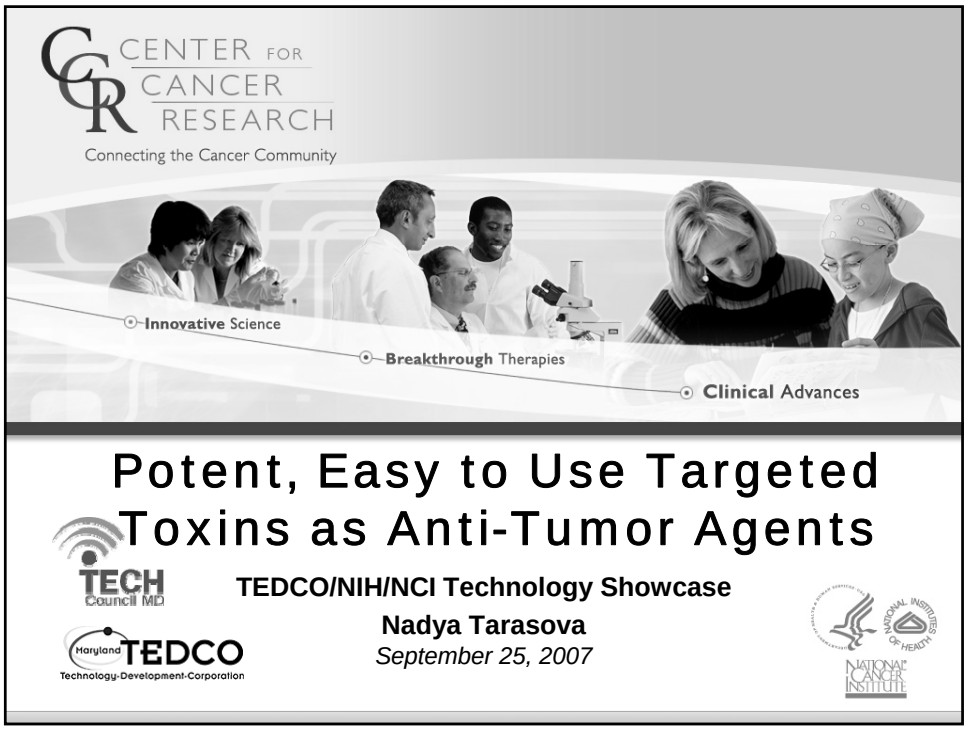


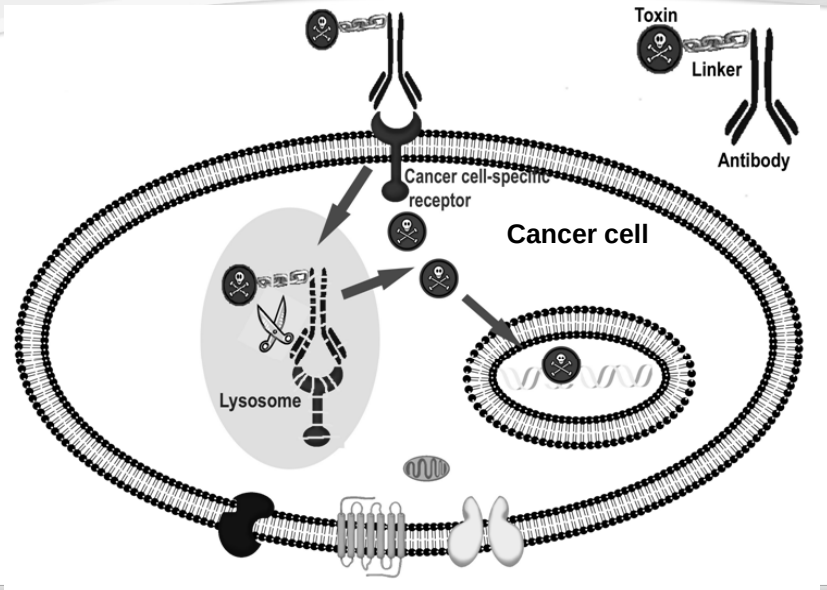
Potent, Easy to Use Targeted Toxins as Anti-Tumor Agents

TEDCO/NIH/NCI Technology Showcase

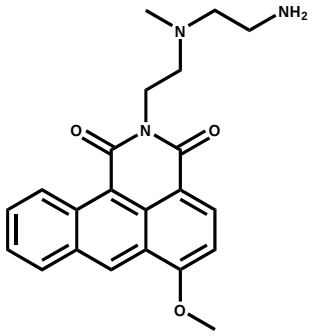
Nadya Tarasova

September 25, 2007

Immunotoxin in action

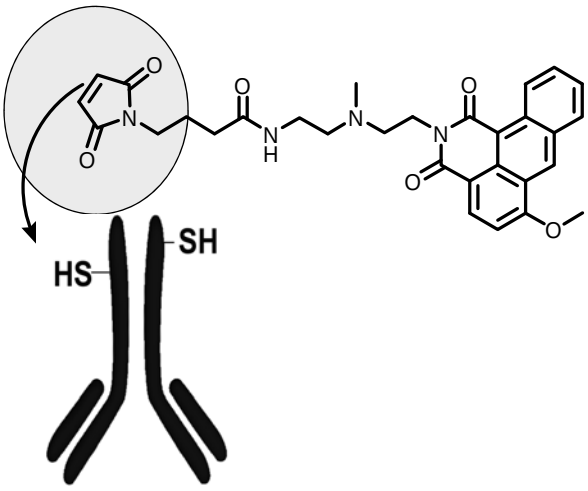


New highly toxic azonafide derivative MD117

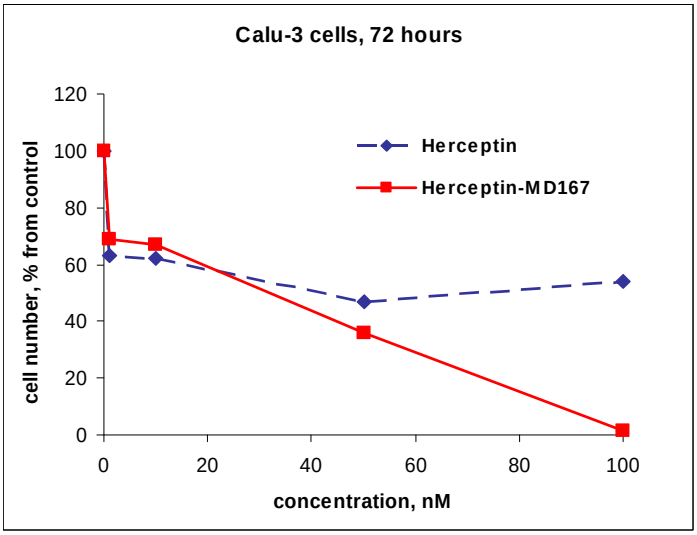


Topoisomerase I and II inhibitor with GI_{50} in subnanomolar range has a linker that allows for attachments to antibodies and other tumor-specific ligands.

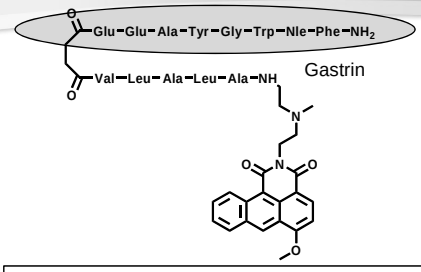
MD167 can be easily attached to an antibody or a peptide generating cancer-specific toxin

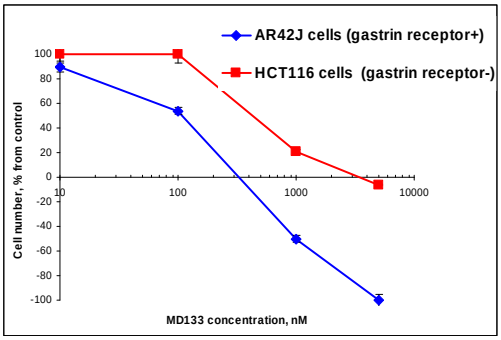


Conjugation of herceptin to MD167 enhanced toxicity of the antibody



Toxin conjugated to gastrin has enhanced toxicity towards to gastrin-receptor-positive cells





Technology Applications

Generation of targeted therapeutics with enhanced efficacy and reduced systemic toxicity

Advantages of Azonafide conjugates:

- **Toxin is cell permeable and thus can kill bystander cells with low receptor expression**
- **Toxin has a different mechanism of action compared to DM1, calicheamicine and auristatin that are currently used for generation of immunoconjugates.**
- **Much easier and cheaper to prepare**

Commercial Applications

Currently, there are 9 monoclonal antibodies approved for cancer treatment by FDA and many more are in clinical trials and development.

Conjugation to toxin can approve efficacy of any of those, widen their applications and the market.

Collaboration Opportunities

- **Chemistry**

  Further development of azonifide derivatives with enhanced toxicity and selectivity

- **Biochemistry**

  Development of the conjugates with antibodies provided by industrial partner

Contact Information

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