Multifunctional Nanoparticles: A Drug Carrier for Pancreatic Cancer Treatments

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Unmet Need

– Pancreatic Cancer - 4th most prevalent & high mortality
  • ~42,000/year US; 220,000/year WW
  • Results in 37,000 deaths/year
  • Median survival of 6-12 months; >5 years only 5%
  • Most treated only with chemotherapies which have drawbacks
    – 80 – 90% broken down soon after administration
The Technology
Targeting to Tumor Cells & Releasing the Drug
Preliminary Results

MIA PaCa-2 Tumor

Control vs ATF-IONP-GEM

Control | Gemcitabine | IO-Gem | ATF-IO-Gem

M1
M2
M3
Value Proposition

• Product: Targeted pancreatic cancer therapeutic

• Unique linker *patent pending

• Market size –
  – ~42,000/year US
  – Even a small improvement in outcome significant and viable
    • Example: Provenge

• IONPs are in clinical use and non-toxic
  – Added MRI imaging benefits by using IONP core

• Potential to expand to other chemotherapies
Development & Future Plans

• Current –
  – In vitro – cytotoxicity & tumor growth studies
  – In vivo – mouse xenografts

• Future –
  – Project funded by NCI
  – Research
    • Transgenic mouse model studies
    • Toxicity, pharmacodynamic, & dosage studies
    • Other drug combinations
THANK YOU!