Engaging with Industry: Gathering Market Insight for Innovation & Commercial Development

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Outline

- Communicating your Technology to Create Value-based Benefits
- Avoiding Common Pitfalls
- Gathering useful Market Insights
- How OTC works with you and Industry to foster Opportunities
- How OTC can help Fund Generation of Commercially Relevant Data

Communicating your *Technology*

- Industry looks at academia for cutting edge ideas
  - Scientific conferences (presentations and posters)
  - Partnering meetings and Pre-existing relationships
  - ICO’s

- Industry takes into consideration:
  - Strategic fit
  - Level of risk
  - Competitive edge

The Data Disconnect

Academia

Focused on gathering data to support **fundamental knowledge advancement**

Industry

Looking for solutions to well-defined problems with commercial potential

What Drives Science May Not Drive Business

Competitive Edge and Product Market-Fit

- Where does your technology fit in the market?
  - What problem/pain do you solve?
  - How is this currently solved?
  - How are you better?
  - Is your solution feasible?
  - Who is in this space?
  - What are other potential uses?
  - Do you have IP protection?

The Value Proposition

“Our technology is *a novel approach for delivering small molecules* **for** *treating tumors; targeting specific cells;* **in order to**

noun/short phrase

applications/users

improve *efficacy/safety of solid tumor treatment;* **.”**

problem/shortcoming of currently available options

Common pitfalls

- Not Understanding your Audience
- Sharing too much too soon

Non-Confidential information

- Value proposition
- Potential benefits
- Potential applications
- Publicly available materials

Goal = Generate interest

Confidential information

- Ingredients
- Peptide sequence
- Detailed methods
- Unpublished data

Goal = Protect IP Rights

Gathering useful market insights

CUSTOMER DISCOVERY = EVIDENCE-BASED ENTREPRENEURSHIP

- Evidence there is a need for your technology
- Evidence your technology has a competitive edge
- Evidence it is a viable option for users

Customer Discovery Outcomes

- Gathering **useful** insights from the market can help you:
    - Lower the risk associated with your technology
    - Help you avoid costly mistakes
    - Align your technology development with industry
    - Foster opportunities for Collaboration

Your Research and OTC – Protecting your IP

- File an invention disclosure with OTC: www.ou.edu/otc
  - Evaluate IP and Commercial Potential
- Work with OTC to develop marketing materials
- Continue to share non-confidential details
- Obtain NDA if discussing confidential details, discuss confidential details in follow-up conversation or after IP is protected.

- Unsure if the information is confidential?
  - “I would be happy to arrange an NDA to enable further discussion.”

OFFICE OF TECHNOLOGY COMMERCIALIZATION
The UNIVERSITY of OKLAHOMA

Cas9 Variant Imparts Substrate Specificity in Target DNA Cleavage

Technology Class: Genome editing
Mechanism: Interference of loop-to-helix conversion in bridge helix
Applications: Type II CRISPR-Cas systems, DNA targeting by Cas9

TRL: 2
IP: 16/570,555
Tech ID: 2019-014
PI: Rajan

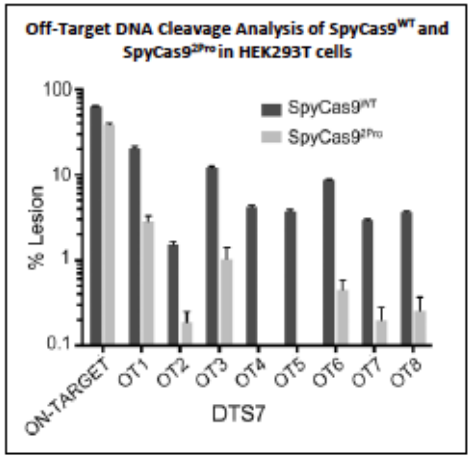
***Goal:** Identify industry partner for further development.*

Background
The CRISPR genome editing process utilizes the Cas9 enzyme to snip DNA, allowing for replacement/alteration of a faulty gene. Cas9's primary drawback is off-target DNA cleavage. Increased stringency of the interdependence between RNA-DNA complementarity and DNA cleavage efficiency would improve the precision of CRISPR-Cas systems, ultimately decreasing unnecessary DNA damage/mutations.

Technology
Site directed mutagenesis was used to mutate a loop region in the bridge helix (BH) of the *Streptococcus pyogenes* (Spy) Cas9 protein in order to increase cutting specificity. This SpyCas9 variant (SpyCas9^{2Pro}) impairs the DNA cleavage activity by accumulating nicked products and reducing target DNA linearization, thereby imparting higher selectivity in DNA targeting. Compared to WT protein (SpyCas9^{WT}), DNA cleavage activity of SpyCas9^{2Pro} decreases substantially against those with PAM-proximal mismatches, ultimately resulting in reduced off-target cleavage. Off-target cutting is decreased in both *in vitro* study and cell-based (HEK293T – **see figure below**) activity assays (Babu et al., 2019).

Differentiation Factor
Compared to WT, SpyCas9^{2Pro} offers a higher degree of selectivity in DNA targeting, providing enhanced gene editing capabilities.

Next Step
Current work is focused on increasing on-target activity of the SpyCas9^{2Pro} variant.



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Fostering Opportunities with Industry

Collaborate with OTC to create *technology summary*

- Non-confidential material
- Problem/solution approach for BD representative
- Focus on commercially relevant data & differentiating factors

OTC publishes your technology

- IN-PART - Subscription-based match-making platform
- IN-PART proactively pushes research with commercial potential to their industry network
  - Introductions to new commercial partners, feedback from market-decliners, impact reports

Industry Call for Opportunity (ICO's)

Company X is seeking technologies for sponsored research funding to address the distribution of macromolecules to hard-to reach tissues for the treatment of rare metabolic disorders…..

A consumer goods company is seeking new manufacturing processes or new raw materials to reduce carbon footprint associated with personal care formulations….

Submissions

- Research projects
- Academic experts
- Centers of Excellence
- Technology (IP)

Outcomes

- Funding for academic research
- Sharing existing company know-how & resources
- Licensing
- Long-term strategic partnerships

Funding for Commercially Relevant Data

Growth Fund Overview:

- University IP Policy
- Disclosure on file with OTC
- OU – owned IP
- Implemented and managed by OTC and Growth Fund Selection Committee

Growth Fund for Commercialization of OU IP

PHASE I (up to 5K)

- Market Discovery Research
  - “Best Fit”
  - “Best Path”
  - Customer discovery interviews
  - Phase I Report

PHASE II (up to 75K)

- Completion of Phase I (or similar)
- Translational Research
  - Market due diligence to support
  - Clear metrics and variables
  - Maximize Economic Impact
  - Phase II Report

Office of Technology Commercialization

http://www.ou.edu/otc/

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March 29, 2023
12:00 PM

Innovation Pathway – “iPATH”

Presented by John Hanak

Chief Innovation and Corporate Officer

Executive Director, Office of Innovation and Corporate Partnerships

More information and zoom registration to come