Facilitating Collaboration in the Life Sciences Panel

April 22, 2022

Berkeley Center for Law & Technology

Where Law Meets Innovation

BCLT BY THE NUMBERS

#1 IP law program, **19 years in a row,** by US News

3 Faculty Directors ranked among top 5 most cited IP scholars

35 Practitioner instructors teaching advanced and technology courses

50+ Law & tech courses planned for 2021-2022

9 BCLT faculty-authored textbooks

13 Tech-focused Student Groups

9 Major conferences planned for 2021-2022

20+ Other expert-level events planned for 2021-2022

24 Years BCLT has been collaborating with Federal Judicial Center

800+ Federal judges trained at the BCLT/ FJC IP seminar

Kate Hillier

Cooley

Kate's practice focuses on the representation of public and private life sciences companies discovering, developing and marketing biopharmaceutical, vaccine, medical device, diagnostic and digital health products.

https://www.cooley.com/people/kate-hillier

Ryan Murr

GIBSON DUNN

Ryan represents public and private companies and investors in the biotechnology, pharmaceutical, medical device and diagnostics industries in connection with securities offerings and business combination transactions. In addition, Ryan regularly serves as principal outside counsel for publicly traded companies and private venture-backed companies.

https://www.gibsondunn.com/lawyer/murr-ryan-a/

Margaret Sampson

BAKER BOTTS

Margaret has a global, strategic intellectual property transaction and patent counseling practice focused in the areas of life sciences, pharmaceuticals, research tools, and medical devices. Intellectual property and technology clients turn to Margaret for evaluating, structuring, negotiating, and documenting major transactions.

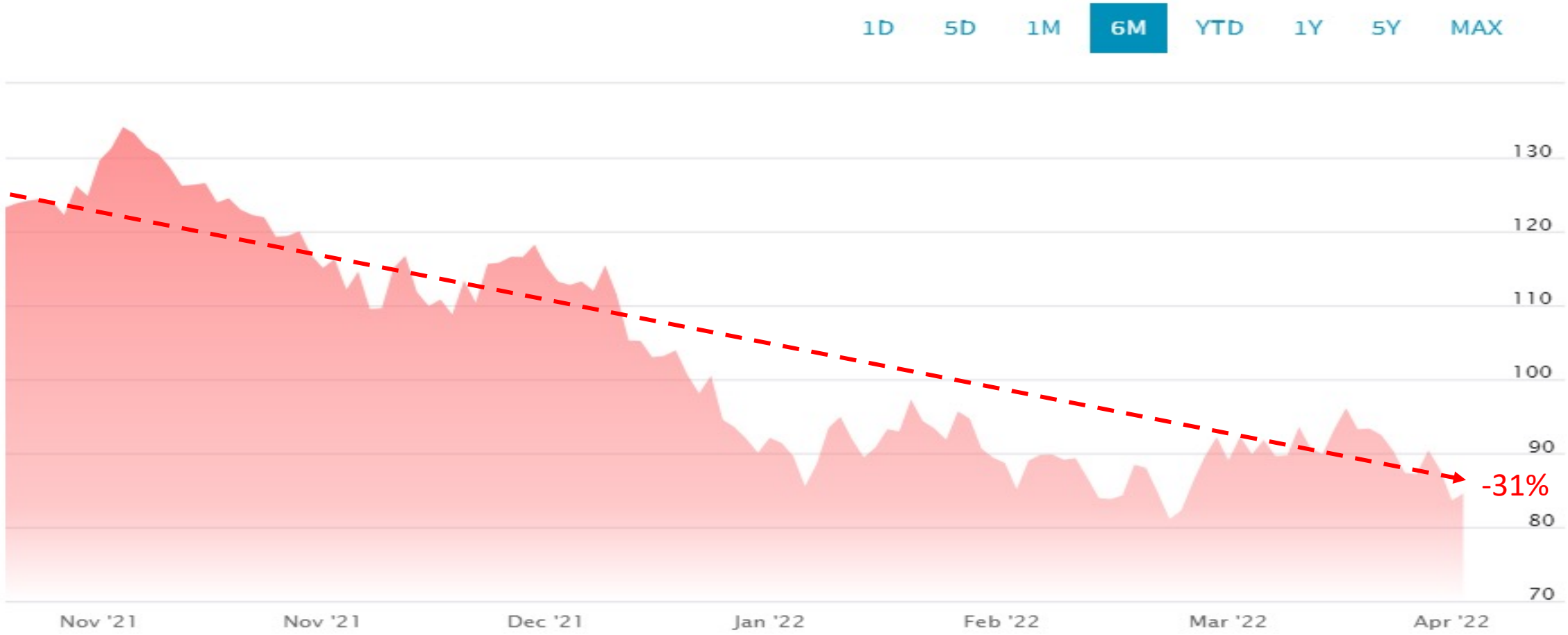
https://www.bakerbotts.com/people/s/sampson-margaret

1. Market conditions driving changes in behavior
2. Focus on non-dilutive sources of capital and partnerships
3. Approaches vary, depending on individual circumstances

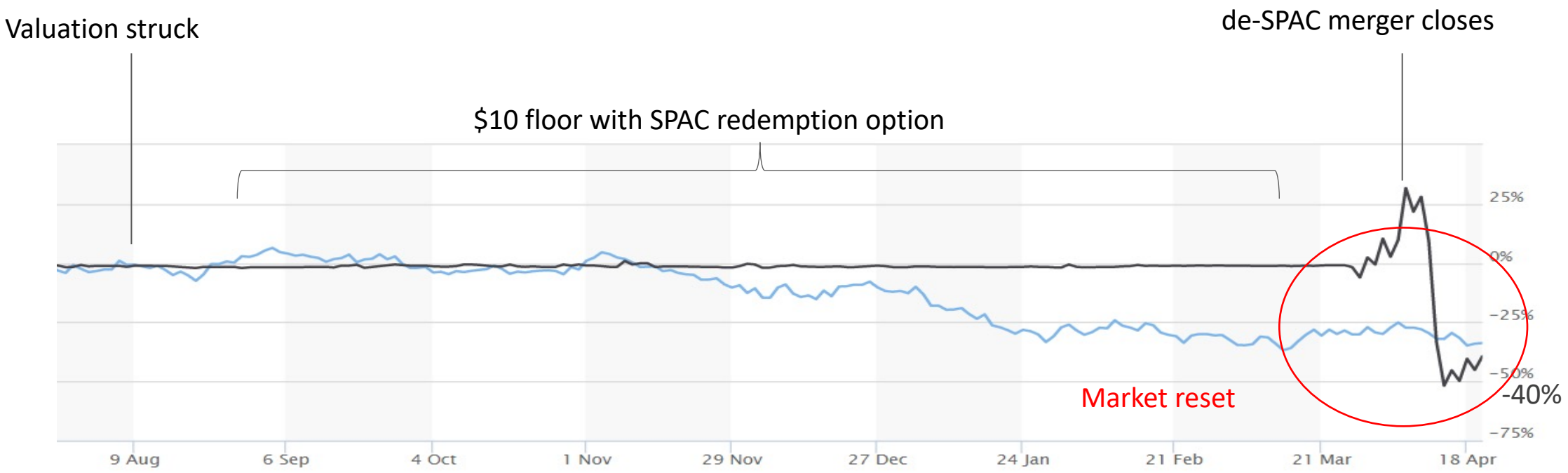
How we will get there

- Market overview
- Impact on companies and operations
- Pivot to non-dilutive capital
- Funding options and key drivers

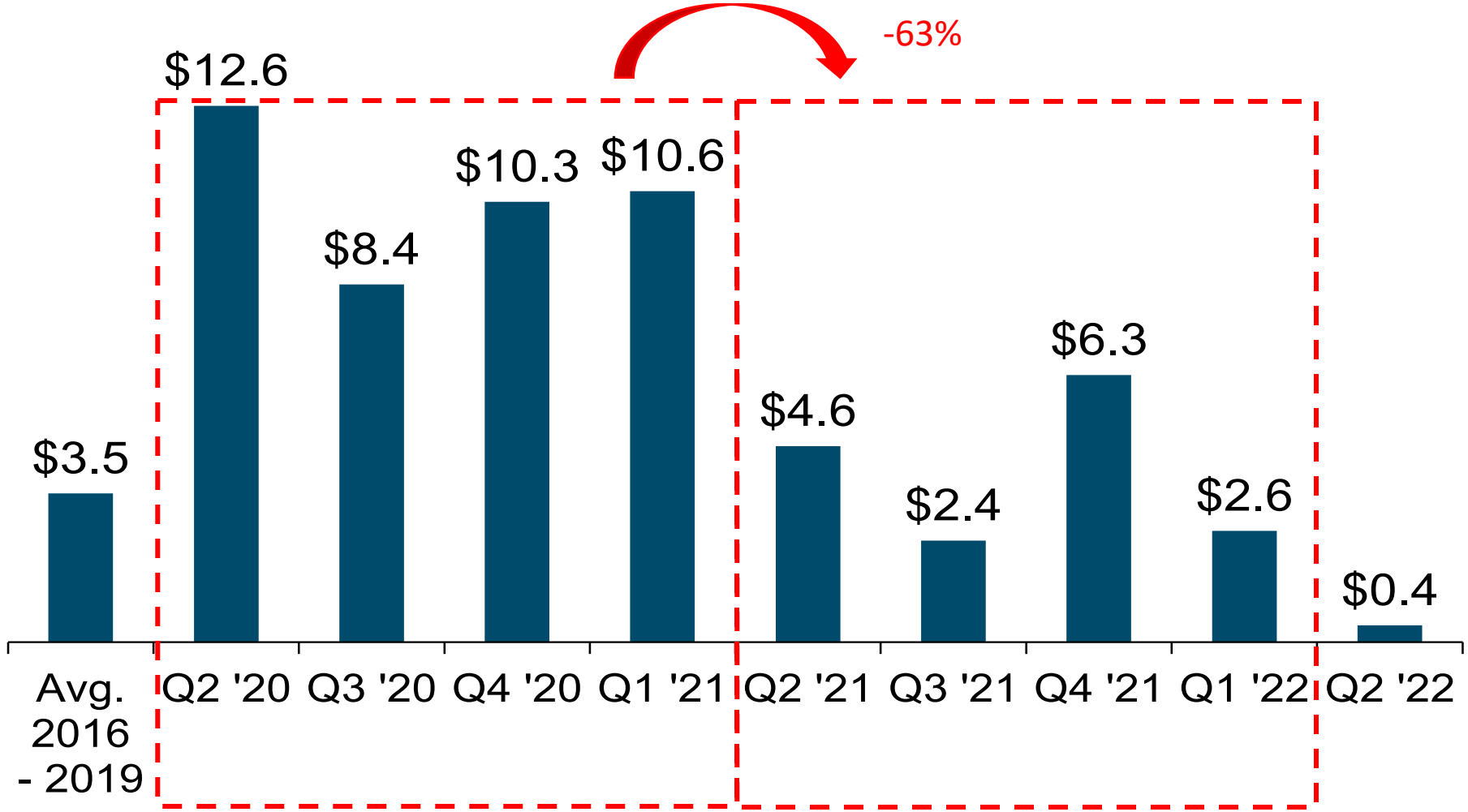
XBI Biotech Index (last 6 months)



SPAC time capsule



BioPharma Follow-on Offerings ($B)



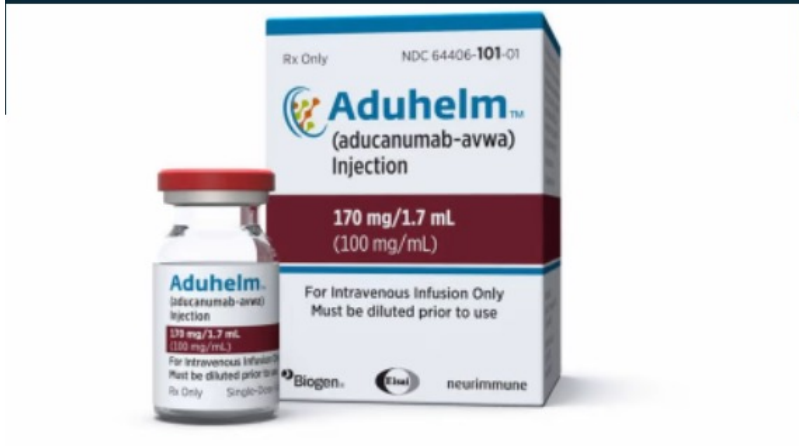
SVBLEERINK

Other headwinds | CMS and FDA delays

CMS' Biogen decision could spell problems for Lilly, Roche Alzheimer's drugs, half of surveyed neurologists say

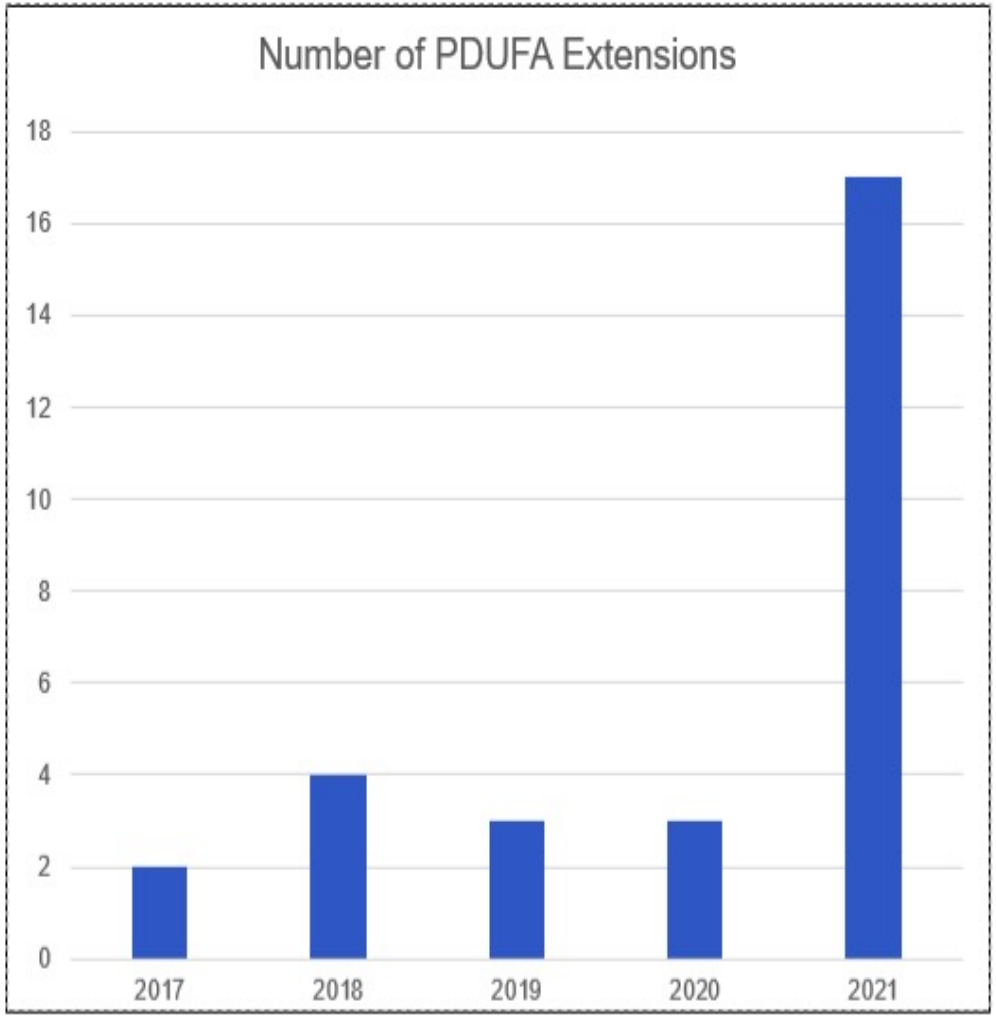
By **Ben Adams** · Feb 1, 2022 06:45am

Alzheimer's | drug reimbursement | Aduhelm (aducanumab) | Biogen



Overall, neurologists surveyed agreed with the Centers for Medicare & Medicaid Services that Aduhelm should be restricted, with 55% agreeing, 33% neutral and 15% disagreeing. (Biogen)

Neurologists in the U.S. are agreeing with a new draft decision from the Centers for Medicare & Medicaid Services (CMS) that restricts reimbursement of Biogen's controversial Alzheimer's disease drug, Aduhelm, to Medicare patients enrolled in approved clinical trials only. In fact, half of those surveyed said CMS' decision would hit how they prescribe the rival drugs waiting in the wings that are also included in CMS' decision.



Operational consequences of market reset

- Cash runway & implications on operations
- Re-evaluation of clinical development pipeline
  - Modification of scope of clinical trials
  - Reduction in indications being evaluated
- Re-evaluation of pre-clinical development pipeline
  - Shelving or out-licensing of early-stage programs
  - In-licensing assets/platform technology is less attractive when capital constrained
  - Focus on internal development efforts in lieu of in-licensed assets
- Need to look to alternative sources of capital for operations

Accessing capital outside of capital markets

1. Priority review vouchers
2. Sale of royalties
3. Synthetic royalties
4. Research funding arrangements
5. Regional licenses
6. Option deals

Priority Review Voucher Sales

Rare pediatiatric disease *or*
Neglected tropical diseases

Priority Review Voucher Sales

Priority Review Voucher Sales

Priority Review Voucher Sales

~ $110 million

Types of Royalty Monetizations | “True” Royalty Sale

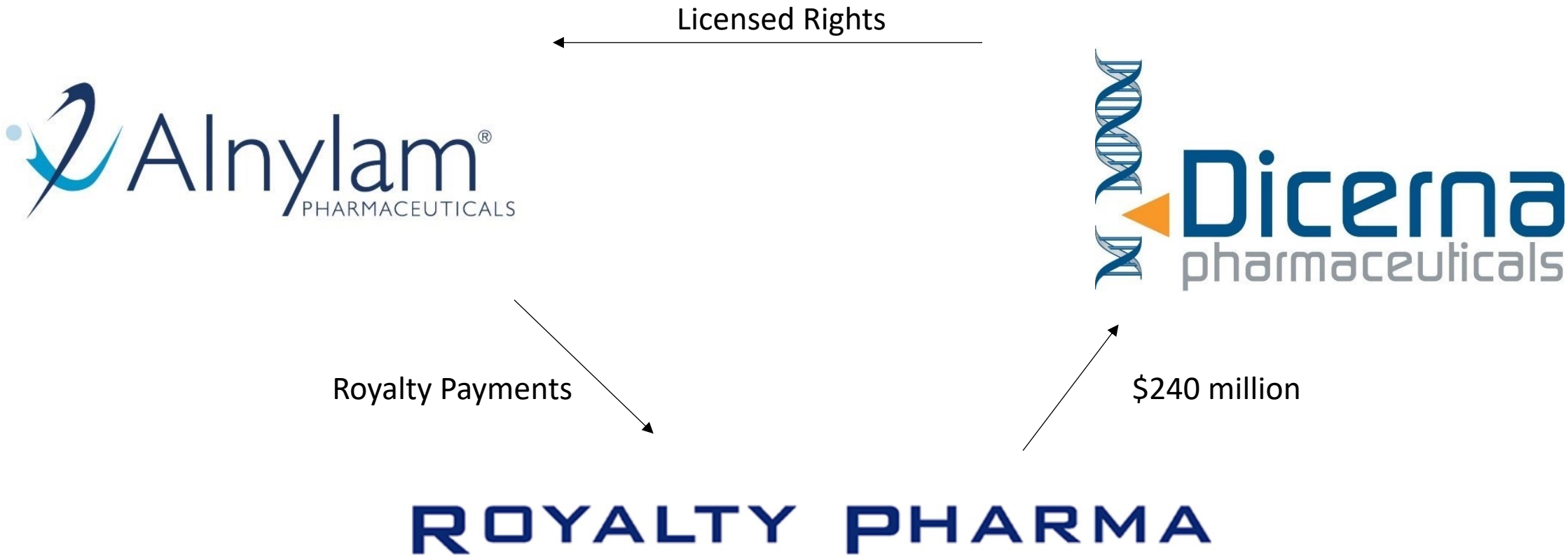
A sale by a licensor of rights to receive royalty payments (and, if applicable, milestone payments) for future sales of licensed products by the licensee (the “marketer”).

- **Uncapped sale**
  - Either sale of entire entitlement or a “strip” of the royalty interest until the end of the royalty term.
- **Capped Sale**
  - Royalty stream pays off buyer up to a set amount (cap).
  - Cap often varies depending on when it is met.
    - Example: Ultragenyx sale of Crysvita royalties. Capped at 1.9x if cap is met by 2030, otherwise capped at 2.5x.
- **Cap-and-Tail**
  - Royalty stream pays off buyer up to a set amount (cap).
    - Cap applies either per-year or over entire stream.
  - After cap is hit, buyer and seller share the royalty until the end of the royalty term.


NDC 71336-1002-1
OXLUMO™
(lumasiran) injection
94.5 mg/0.5 mL
For Subcutaneous Injection
by Healthcare
Professional Only
1 Single-dose vial
Discard unused portion
Rx Only
NDC 71336-1002-1
OXLUMO™
(lumasiran) injection
94.5 mg/0.5 mL
Manufactured for:
Alnylam Pharmaceuticals, Inc.
Cambridge, MA 02142
Manufactured by:
Vetter Pharma-Fertigung
GmbH & Co. KG
Eisenbahnstrasse 2-4
88085 Langenargen, Germany
Alnylam
Rx Only
NDC 71336-1
OXLUMO™
(lumasiran) injection
94.5 mg/0.5 mL
Subcutaneous use
Single-dose vial
70000271
Rx On

Royalty Financing

Royalty Financing



Types of Royalty Monetizations | Synthetic Royalty

Financing structure where payment to the financing source is primarily (or solely) funded by a portion of future product sales by the borrower, who is also the marketer.

- Counterparty risk is greater in a synthetic royalty arrangement, which creates greater focus on downside protections, depending on the size and stability of the counterparty
- Upside can be capped (more debt-like) or uncapped (more equity-like)

	Debt-like	Equity-like
Economic return	Capped return (e.g. 2.0x invested capital)	Uncapped return
Protections	Debt-like covenants (including incurrence covenants) Possible use of SPV to hold product assets	Light covenants and fewer protections
Economic terms	Possible catch payments (e.g., 1x by 5 years) Make-whole payment at maturity date	Simple payment of royalty Possible step-up in royalty rate based on return
Examples*	SPERO THERAPEUTICS, CTI, La Jolla Pharmaceutical	ADC THERAPEUTICS, BioCryst

* Arrangement is debt-like to more equity-like in structure and/or economics.

Equity-like Example | Orladeyo

$125 million purchase price
Funded on NDA approval

ROYALTY PHARMA

8.75% royalty (declining) on Orladeyo sales in major markets
20% of licensing/collaboration/royalty revenue outside of major markets
1% royalty on global net sales of 9930 (next lead compound)
Uncapped economics
“True Sale” with intercreditor agreement with Athyrium

Debt-like Example | Tebipenum

Up to $125 million purchase price
- $50 million on close*
- $50 million on approval
- $25 million commercial milestone (with Spero's approval)

12% royalty (declining) on tebipenum sales worldwide
Capped at 2.5x invested capital
Catch-up payments:
- 0.6x by 2025
- 1x by 2027
- 102% IRR by final maturity date
- 2.5x on change of control

Debt-like covenants with acceleration on events of default
- Termination fee either 15% IRR or 2.5x cap
- First priority lien on product assets

* To be repaid if NDA approval is not achieved by an outside date.

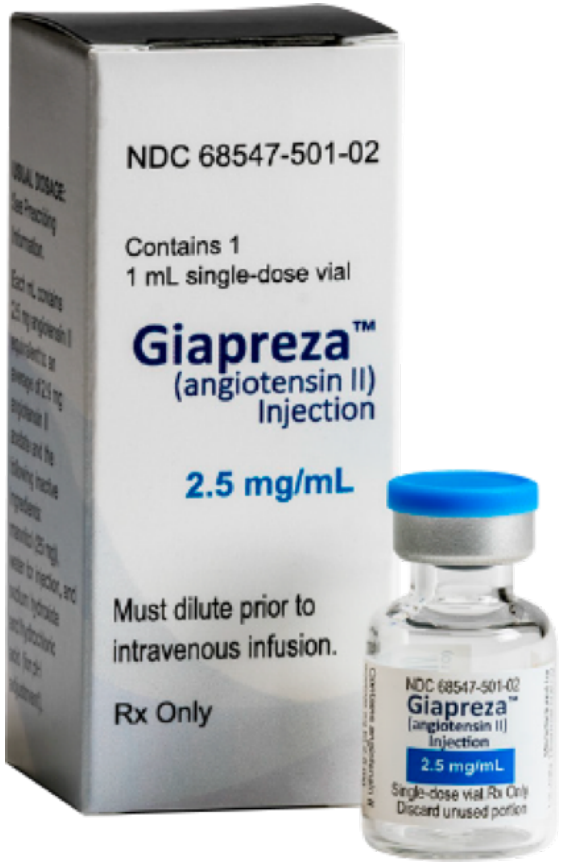
Hybrid Example | Giapreza

$125 million purchase price
- Post-approval transaction
- Early in launch
- Competitive sell-side process

10% royalty (increasing) on Giapreza sales
- Gradual step-up (e.g., 10 ->14%) based on rate of return

Total return capped at 1.8x of invested capital

Debt-like covenants with acceleration on events of default
- Requires SPV holding company structure



Synthentic Royalties | Potential Application

- Publicly traded synthetic royalty interests
  - Sold as a security off S-3
  - Traded on Nasdaq / NYSE
  - Liquid public market in equity-like interest in a specific product (vs. entire company)
    - Consider need for potential make-whole payments for redemption or change of control of issuer
    - Hypthetical example: Pfizer (PFE) and Pfizer COVID Vaccine

Clinical Trial Funding Arrangements

- Third-party funding for pivotal trials
  - Development risk assumed by funding partner (not debt)
  - Funding specific program / asset
  - Return of capital on milestones. Hypothetical funding:
    - 1x funding amount on positive data
    - 0.5x funding amount on NDA / BLA approval
    - 0.3x funding amount tied to commercial milestone

- Third-party funding for early-stage trials
  - Funding platform or basket of assets
  - More equity-like returns. Hypothetical funding:
    - Royalties on sales
    - Revenue sharing on out-licensing or M&A
    - May involve setting up entity-level JV

AVILLION

Blackstone

BVF PARTNERS L.P.

Outlicensing Product Assets as a Source of Capital

- Potential access to non-dilutive funding

- Regional deals (esp. China)
  - Effective way of accessing more efficient local development expertise
  - Approximately 15-20% of patients in global clinical trials are enrolled at China sites
  - Per patient enrollment and clinical trial cost may be substantially lower
  - Many Chinese biopharma are looking to expand into global capabilities
  - China rights in exchange for manufacturing services
  - Japan/EU regional deals less common than previously

- Downside to regional deals
  - Coordination of clinical study design- who has veto rights?
  - Coordination of marketing- trademarks and goodwill
  - Coordination of IP control and enforcement
  - Protection of regional market from imports

Outlicensing Product Assets as a Source of Capital – Option Deals

- Option deals

  - "Simple" option – single asset outlicense/collaboration
    - Means of deferring upfront spend for big pharma – may have budget or governance rationale
    - Allows further "derisking" of an asset or platform before the big check

  - Multi-program or platform collaboration
    - Costs of in-licenses of foundational technology from universities have significantly increased
    - Many immuno-oncology companies have platforms based on multiple technologies
    - Many institutions want to pull all financial levers (equity, cash upfront, sublicense revenue, milestones and royalties)
    - High in-license cost leads to need to do early discovery/development deals to fund programs
    - "Proof of concept" collaborations structured as option deals
      - Upfront cash for specified number of programs (often target-based)
      - Specific directed development funding against agreed research plan
      - Specified deliverables triggering option exercise
      - Potential to expand to additional targets/programs based on time/success

  - Co-funding options may allow optionality and sharing of costs/risk

Thank you for joining us.

Connect with BCLT on LinkedIn:

www.linkedin.com/company/berkeley-center-for-law-technology

Berkeley Center for Law & Technology

Where Law Meets Innovation