



# H1 2022 North America Life Sciences Market Insights & Outlook / 2022年上 半年北美生命科学市场洞察与展望

Gilbert Chan / 陈德佳

NAI Interactive Ltd. / 北美投资讯息有限公司

Nov 16, 2022 / 2022年11月16日

# Content - Healthcare & Life Science Investing in North America /

## 目录 - 北美的医疗保健和生命科学投资

1. Who We Are / 公司介绍
2. Industry Leading Indexes / 行业领先指数
3. M&A Activities / 并购活动
4. Venture Capital (Financing) Activities / 风险投资（融资）活动
5. Hot Topics & Opportunities / 热点与机会
6. Outlook - Life After Pandemic / 前景 - 疫后生活



# Who We Are / 公司介绍

- [NAI Interactive Ltd. \(NAI\)](#), established in 1998, is a leading market intelligence and investor relations service provider for fast growing public companies trading on the North American stock exchanges. Our goal is to serve as a bridge between public companies and Chinese investors, nurturing investor loyalty and form functional networks via our unique platform. Throughout the years, NAI has established itself as the **most trusted firm in providing market insights to Chinese investors**. We strive to provide a more powerful platform for companies and investors to connect with each other. / [NAI Interactive Ltd. \(NAI\)](#)成立于1998年，是一家领先的市场资讯和投资者关系服务提供商，服务于在北美证券交易所交易的成长型上市公司。我们的目标是作为上市公司和华人投资者之间的桥梁，通过我们独特的平台培养投资者的忠诚度并形成人脉。多年来，NAI已经成为为华人投资者提供市场洞察力方面最值得信赖的公司。我们努力为公司和投资者提供一个更强大的交流平台。
- [GCFF](#) is the leading bi-lingual investment event platform in North America and Asia. Since 2000, we have hosted over 80 investment conferences and been to various cities like Vancouver, Toronto, LA, San Francisco, NYC, Shenzhen, Shanghai, and HK. Our journey keeps on going. Organized by a professional team, we are committed to keeping searching for good investment ideas and showcasing them to the investment community. / [GCFF](#)是北美和亚洲领先的双语投资活动平台。自2000年以来，我们已经举办了80多场投资会议，足迹遍布温哥华、多伦多、洛杉矶、旧金山、纽约、深圳、上海和香港等多个城市。我们的活动举办范围还在扩大。我们依靠专业团队的组织，致力于不断寻找好的投资理念，并将其展示给投资界。



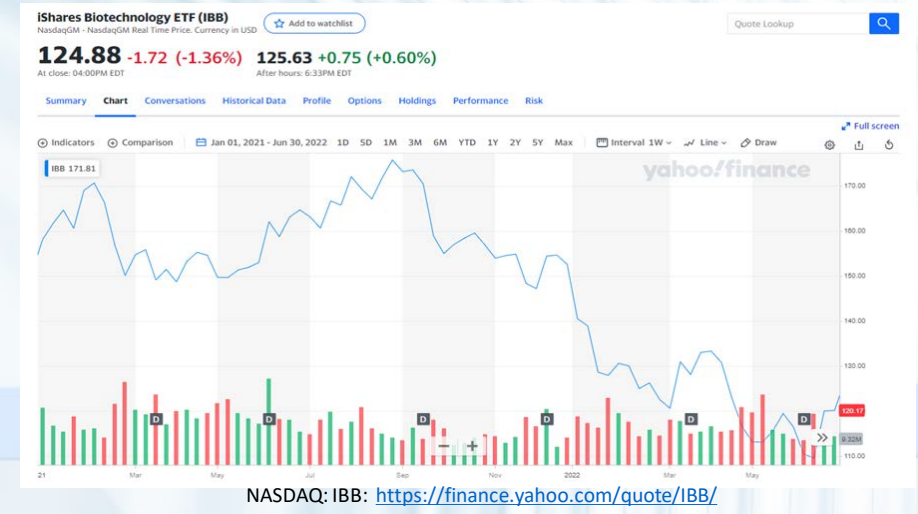


# Leading Indexes - HCLS Investing in North America / 领先指数 - 北美医疗保健和生命科学投资

## Healthcare Indexes in the US / 美国医疗保健指数

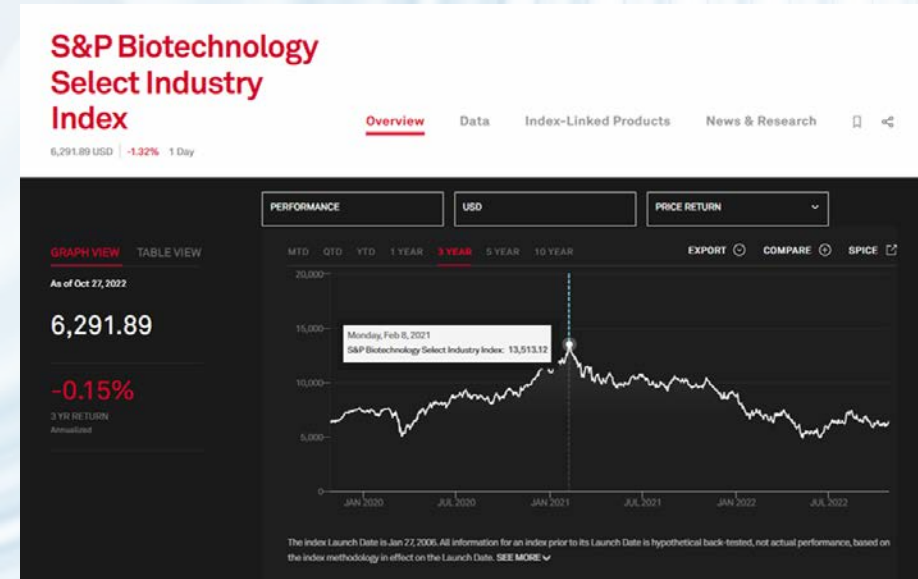
### 1. NASDAQ: IBB

- Peak at \$175.81 on 8/29/2021, then **dramatically fall** / 最高点是2021年8月29日的\$175.81，然后大幅回落
- Bottom at \$109.56 on 6/12/2022, **-38%** in less than one year / 最低点是2022年6月12日的\$109.56，在不到一年时间内下跌**38%**



### 2. INDEXSP: SPSIBI

- Peak at \$13,513.12 on 2/8/2021, then **constantly decreasing** / 最高点是2021年2月8日的\$13,513.12，然后持续回落
- Bottom \$4882.37 on 5/11/2022, **-64%** within one year / 最低点是2022年5月11日的\$4882.37，在不到一年时间内下跌**64%**





# Leading Indexes - HCLS Investing in North America / 领先指数 - 北美医疗保健和生命科学投资

## Healthcare Index in Canada / 加拿大的医疗保健指数

### TSX: TTHC

- Peak at C\$110.1 on 2/10/2021 / 最高点是2021年2月10日的110.1加元
- Bottom at C\$22.7 on 6/17/2022, **down by 79%** / 最低点是2022年6月17日的22.7加元, 下跌了79%

## Possible Reasons for the downward market / 市场下行的潜在原因(Stout, Q2 2022)

### 1. COVID-19 Pandemic / 新冠疫情

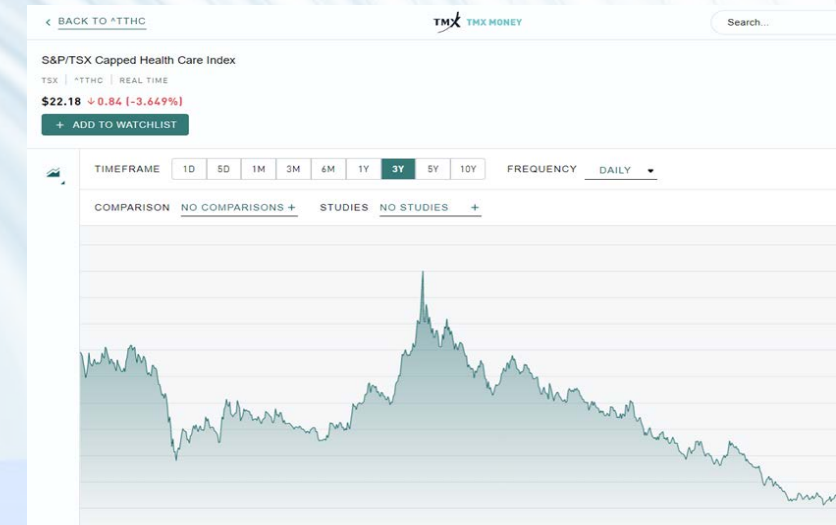
- COVID has impacted the worldwide supply of labor and materials, leading to rising costs (excessive stimulus payments impacting inflation) / 新冠疫情影响了全球的劳动力和材料供应, 导致成本上升 (过度的刺激性付款影响了通货膨胀)

### 2. US Interest Rate Hikes / 美国加息

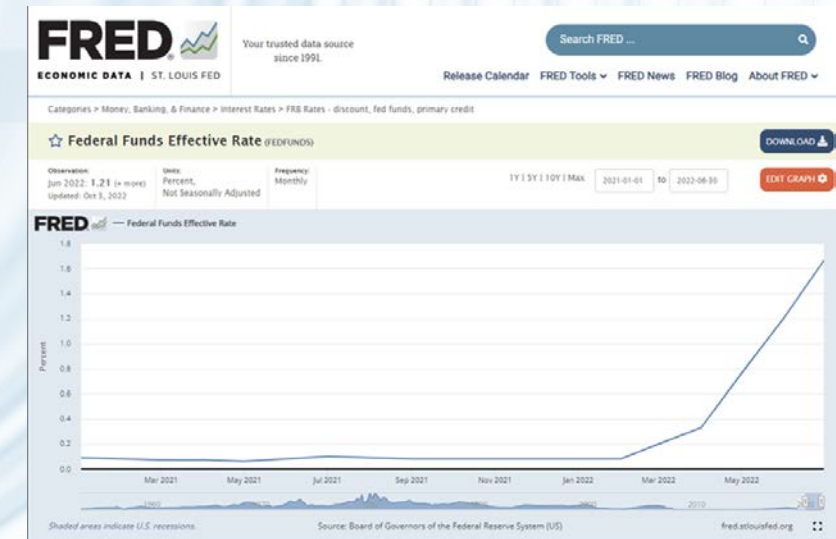
- Fed raises interest rates to combat high inflation / 美联储加息遏制高通胀

### 3. Recession Concerns / 经济衰退担忧

- Recession concerns in investor sentiment, contributing to the downward pressure on the market / 投资者担忧经济衰退, 给市场增添了下行压力



TSX: TTHC: <https://money.tmx.com/en/quote/%5ETTTHC>



Federal Funds Effective Rate: / 联邦基金实际利率:  
<https://fred.stlouisfed.org/series/FEDFUNDS#0>



# US Life Sciences M&A Activities Plummet 1H'22 / 2022年上半年美国生命科学行业并购活动大幅降温

## 1. Total M&A Transaction Volume: / 总并购交易量

- Q4 2021: **565** vs Q1 2022: **438** (weak Q1 was expected, given the bolus of transactions consummated at year-end 2021) / 2021年第四季度: **565**笔 vs 2022年第一季度: **438**笔 (由于2021年末交易达到峰值, 第一季度走弱是可以预见的)
- Q2 2021: **535** vs Q2 2022: **338** (significant dip by 37%, worse than anticipated) / 2021年第二季度: **535**笔 vs 2022年第二季度: **338**笔 (大幅下降, 差于预期)

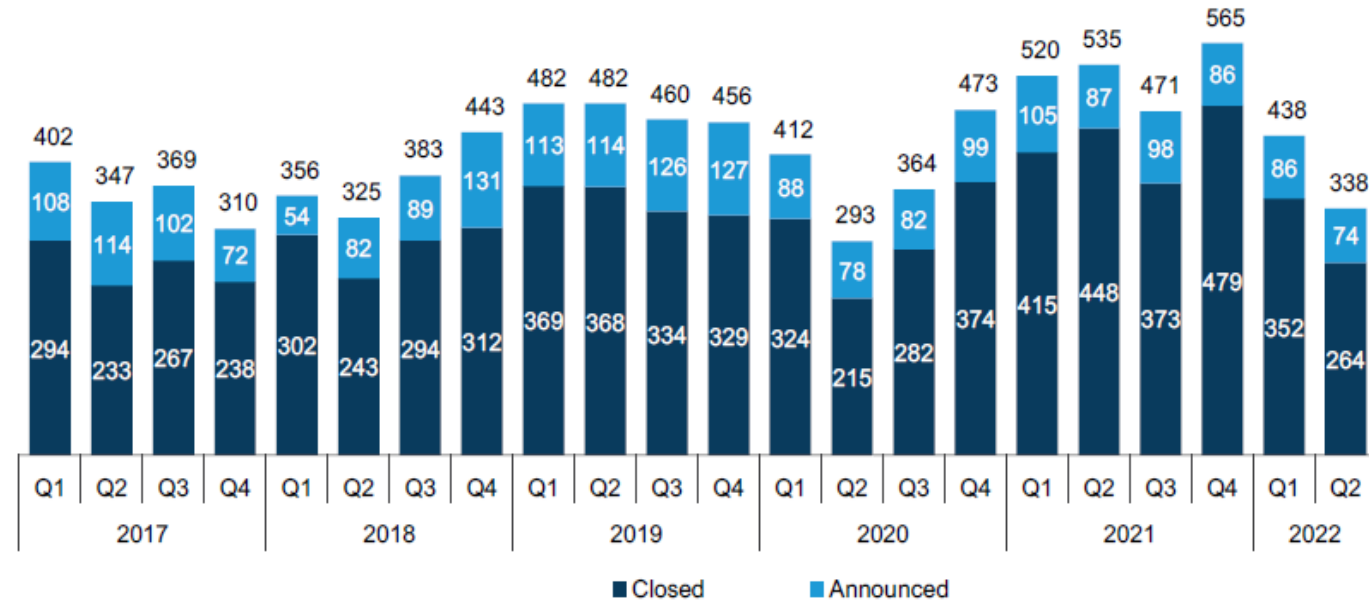
## 2. The Volume of New Deal Announced: / 宣布新交易量

- Q2 2021: **87** vs Q2 2022: **74** (lowest since Q1 2018, which suggests that 2H 2022 will not rebound much) / 2021年第二季度: **87**笔 vs 2022年第二季度: **74**笔 (2018年第一季度以来最低值, 这表明2022年下半年不会大幅走高)
- Lenders are expected to become more discerning and conservative in the second half, given recession fears and recent interest rate increases / 鉴于对经济衰退的担忧和最近的利率上升, 预计出借方在下半年会变得更加谨慎和保守。

## 3. The Volume of Closed Deals: / 完成交易量

- Q1 2022: **352** vs Q2 2022: **264** (decrease by 25%) / 2022年第一季度: **352**笔 vs 2022年第二季度: **264**笔 (减少25%)
- Q4 2021: **479** vs Q2 2022: **264** (down by 41%) / 2021年第四季度: **479**笔 vs 2022年第二季度: **264**笔 (下降41%)

Quarterly Healthcare & Life Science M&A Transaction Volume  
(Number of Announced & Closed M&A Transactions Per Quarter)



Healthcare & Life Sciences Industry Update (Stout, 2022): / 医疗保健与生命科学行业最新信息(Stout, 2022):  
<https://www.stout.com/en/insights/industry-update/healthcare-life-sciences-industry-update-q2-2022>



# US Major Billion-Dollar Deals Despite The Slow Start / 即使上半年开局缓慢，美国市场仍有几笔大型交易

6 months 2022  
(based on YTD June semi-annualized)

Value by the numbers

**\$61.7B**



Decrease in deal value vs.  
same period in 2021

Volume by the numbers

**137**



Decrease in deal volumes  
vs. same period in 2021

Source: PwC analysis of Refinitiv data

Even though the transaction volume and value are decreasing, there are still some mega pharmaceutical & life sciences deals in the first half of 2022./ 尽管交易量和交易额都在下降，但在2022年上半年制药和生命科学行业仍有一些大型交易。

## Top 2022 PLS deals - YTD\*

Transaction status	Target name	Industry	Acquiror full name	Value of transaction (\$billions)
1 Announced	Biohaven Pharmaceutical Holding Company Ltd.	Biotech	Pfizer, Inc.	12.2
2 Announced	Turning Point Therapeutics, Inc.	Biotech	Bristol-Myers Squibb Company	4.0
3 Announced	Affinivax, Inc.	Biotech	GlaxoSmithKline plc.	3.3
4 Announced	Biosimilars Portfolio and Related Commercial and Operational Capabilities of Viatris Inc.	Biotech	Biocon Biologics Limited	3.3
5 Announced	Pharma Intelligence U.K. Limited	Other	Warburg Pincus LLC; Mubadala Investment Company PJSC	2.3
6 Closed	PeproTech, Inc.	Other	Thermo Fisher Scientific Inc.	1.9
7 Announced	Sierra Oncology, Inc.	Biotech	GlaxoSmithKline plc.	1.9
8 Closed	Zogenix, Inc.	Pharma	UCB Biosciences, Inc.	1.9
9 Announced	Columbia Care Inc.	Pharma	Cresco Labs, Inc..	1.8
10 Announced	Parata Systems, LLC	Other	Becton, Dickinson and Company	1.5

Source: PwC analysis of Refinitiv data

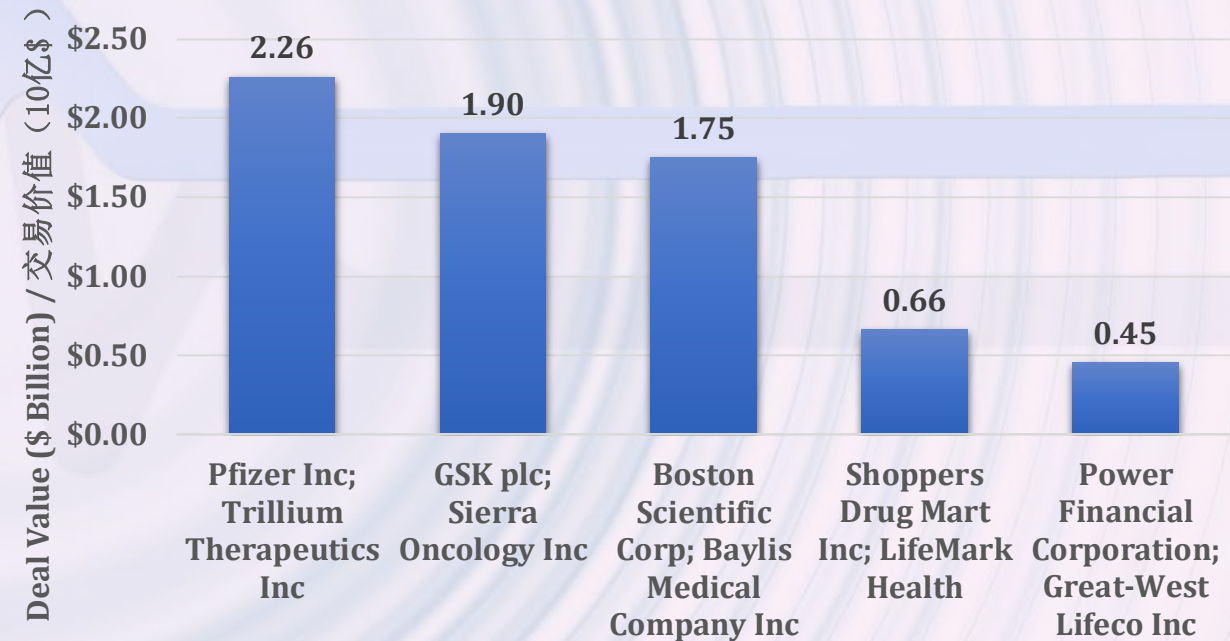
\*Data as of June 10, 2022



# Canada Major Billion-Dollar Deals (LTM June 2022) / 加拿大大笔交易（截止2022年6月的过去12个月）

- In the last twelve months (LTM June 2022), a total of **42 M&A deals** (pending and completed) were announced in the healthcare of Canada. / 在过去的12个月（截止2022年6月），加拿大的医疗保健领域共宣布了**42项并购交易**（待定和完成）。
- Total deal value of **over \$8.24 Billion** in the LTM period (June 2021 – June 2022). / 在这12个月（2021年6月-2022年6月）里，交易的总价值超过**\$82.4亿**
- Secured deal between **Pfizer Inc and Trillium Therapeutics Inc** valued at **\$2.26 Billion** on Aug 23, 2021 was the largest M&A deal in the Canada Healthcare sector. / 辉瑞和**Trillium Therapeutics** 于2021年8月23日进行的价值**\$22.6亿**的担保交易是加拿大医疗保健领域最大的并购交易

*Five Largest Healthcare M&A Deals in Canada (LTM June 2022) / 加拿大医疗保健领域五笔最大的交易（截止2022年6月的过去12个月）*



Global Data, June 2022: / 2022年6月: <https://www.globaldata.com/data-insights/healthcare/canada--five-largest-mergers--acquisitions-deals-by-value-in-the-healthcare-sector--ltm-2087994/>



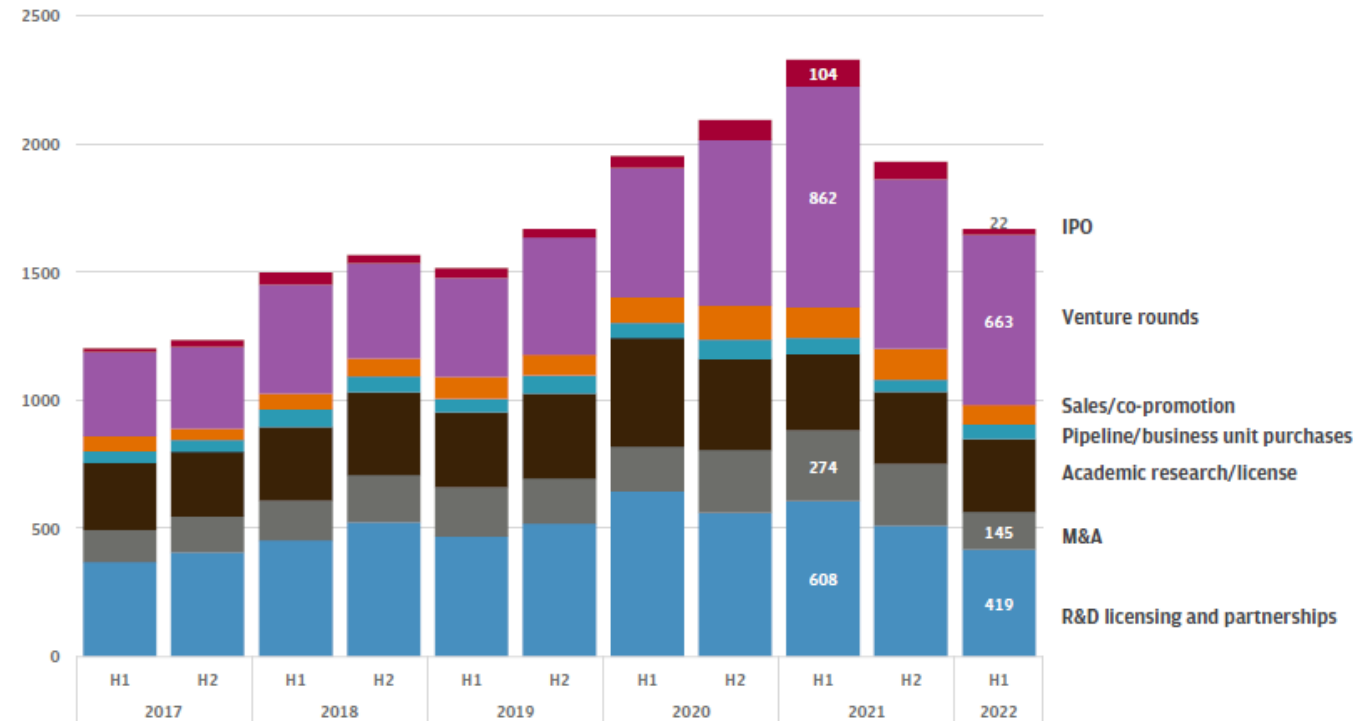
# US Life Sciences Deals and Funding back to Pre-2020 Levels / 美国生命科学交易和融资恢复到2020年之前的水平

## BioPharma and MedTech / 生物制药企业和医疗技术公司

- **IPO and M&A:** Both were the lowest activity across the five-year in the second quarter of 2022. / 首次公开上市和并购：2022年第二季度二者都处于五年来最低水平
- Total transaction volume settled to 2019 levels at **1,667** / 今年上半年交易总额为**1,667**笔，降至2019年的水平
- **145 M&A deals** in H1 2022 / 2022年上半年发生了**145**笔并购交易
- **Venture:** / 风险融资：
  - **663** venture rounds across BioPharma and MedTech, down from the 862 peak in funding rounds in the first half of 2021. / 在生物制药和医疗技术领域有**663**轮风险融资，比2021年上半年862轮风险融资的高峰有所下降。

Source: DealForma.com database / 来源：DealForma.com数据库  
Financials based on disclosed figures. Data through 7/7/2022. / 财务数据基于披露的数字。数据到2022年7月7日。

Biopharma and medtech deal flow: Total number of deals



J.P. Morgan - Biopharma and Medtech Deals and Venture Outlook, Midyear Outlook - July 2022: / 摩根大通 - 生物制药和医疗技术交易和风险投资展望，年中展望 - 2022年7月

<https://www.jpmorgan.com/content/dam/jpm/commercial-banking/insights/life-sciences/jpmorgan-chase-q2-2022-biopharma-medtech-midyear-outlook-final-ada-report.pdf>



# Life Science Venture Capital in Canada / 加拿大生命科学领域的风险投资

## 1. Investment activity / 投资活动

- Life Sciences saw **C\$622M** invested across 55 deals, compared to Q1 (24 deals), Q2 had a **29% increase** in deal count (31 deals). / 生命科学领域的55笔交易的投资额为**6.22亿加元**，与第一季度（24笔交易）相比，第二季度的交易数量增加了**29%**（31笔交易）。
- A sharp drop **(-51%)** in millions invested in Q2. (Q1 **\$416** to Q2 **\$205**). / 第二季度的投资额急剧下降（-51%）。(第一季度**\$4.16亿**到第二季度**2.05亿**)

## 2. Average Deal Size / 平均交易规模

- A significant fall from **C\$17.34m** in Q1 to **\$6.63m** in Q2. / 从第一季度的**1734万加元**大幅下降到第二季度的**663万加元**。

▶ QUARTER-OVER-QUARTER LIFE SCIENCES INVESTMENT ACTIVITY (2018 - H1 2022)



▶ QUARTER-OVER-QUARTER LIFE SCIENCES AVERAGE DEAL SIZE (2018 - H1 2022)

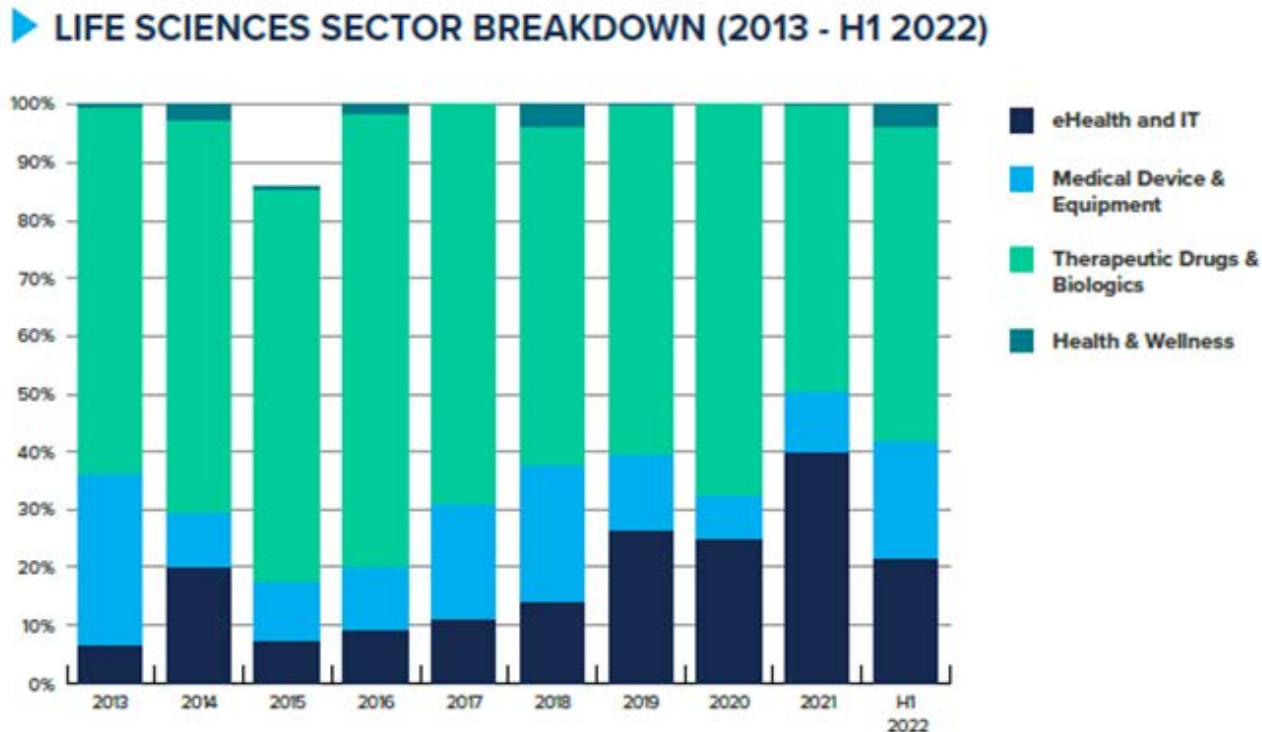




# Life Science Venture Capital in Canada / 加拿大生命科学领域的风险投资

## 3. Life Science Sectors / 生命科学领域

- Quarter-over-quarter trends saw a steady decline in dollars invested into companies focused on **Therapeutic Drugs & Biologics**, with the second lowest amount of dollars invested in a quarter since Q2 2018. / 从季度环比的趋势来看，投资于专注于治疗性药物和生物制品的公司的资金持续下降，自2018年第二季度以来，季度投资金额为第二低的数值



### Lagging But Still Promising: / 暂时滞后但仍有希望:

Compared with 2021's outlier year, life science investment is expected to **exceed 2020 levels by year end.** / 相比异军突起的2021年，生命科学领域的投资预计将在今年年底超过2020年的水平。



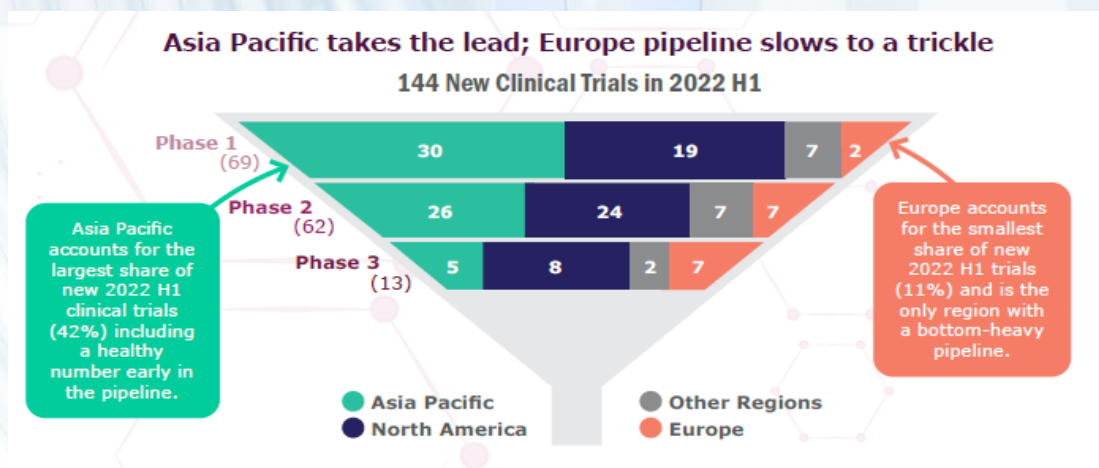
# Hot Topics - Cell Therapy and Gene Therapy / 热点 - 细胞疗法与基因疗法

## 1. Active Clinical Trials by Region and Phase / 按地区和阶段划分的活跃试验

- **North America** leads with **808** active clinical trials, **down by 15%** compared to 2021 / 北美地区以**808**项活跃的临床试验领先，与2021年相比下降了**15%**。
- **Asia Pacific** ranks the second most at **641** trials (**down 15%**) / 亚太地区排名第二，有**641**项试验（下降**15%**）。
- Asia Pacific leads in Phase 1 with 30 new clinical trials, followed by North America with 19 trials / 亚太地区的一期试验以30项新的临床试验领先，其次是北美，有19项试验。

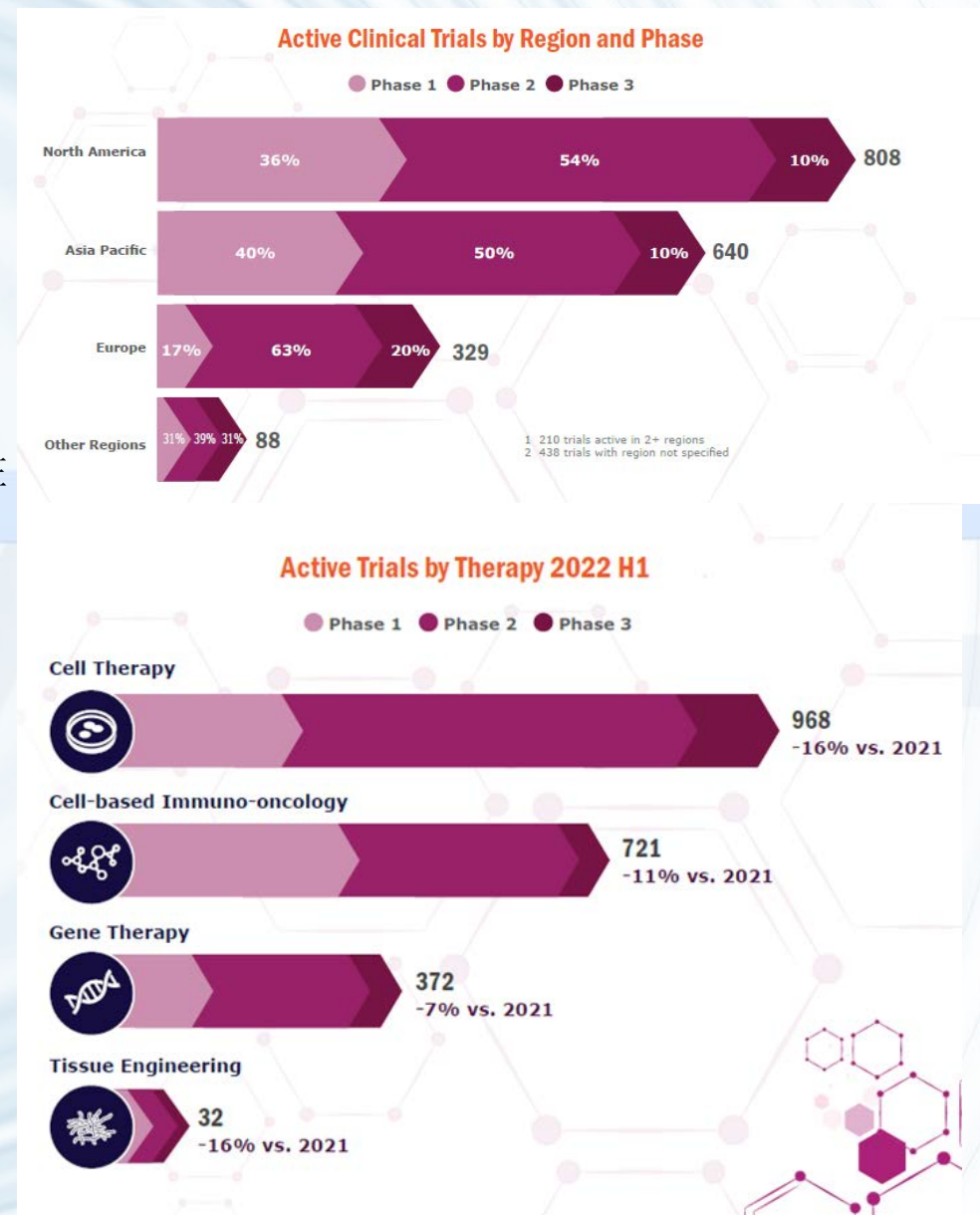
## 2. Active Trials by Therapy H1 2022 / 2022年上半年疗法方面的活跃试验

- **Cell Therapies** account for the largest category of ongoing trials (968, 46%), followed by **cell-based immuno-oncology (CBIO)** (721, 34%). / 细胞治疗是正在进行的试验中占比最大的类别（968，46%），其次是细胞免疫肿瘤学（CBIO）（721，34%）。
- Gene Therapies / 基因治疗 (372, 18%)
- Tissue-engineered Therapies comprise only 2% with 32 active trials / 组织工程疗法只占2%，有32项活跃的试验。



Regenerative Medicine: The Pipeline Momentum Builds – Sep 2022: / 再生医学：管线势能确立 – 2022年9月

<https://alliancerm.org/sector-report/h1-2022-report/>





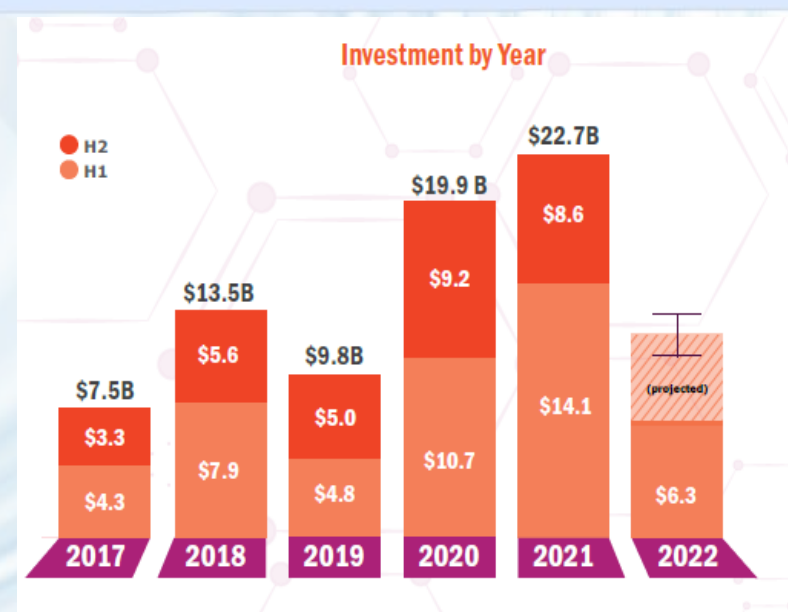
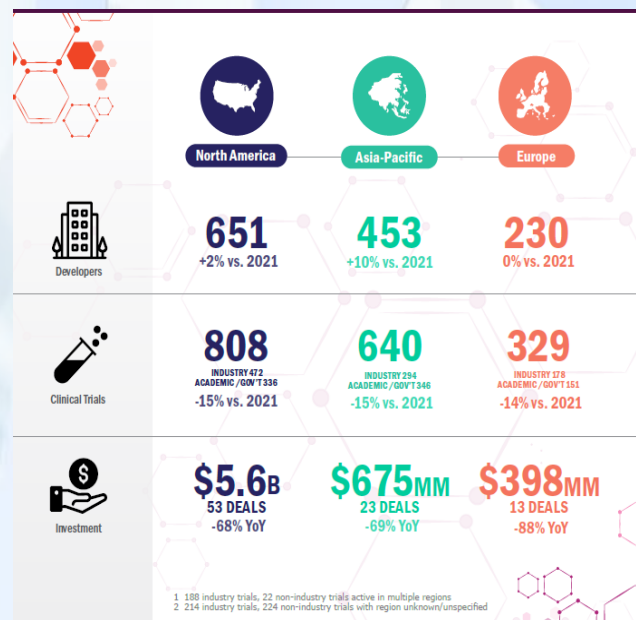
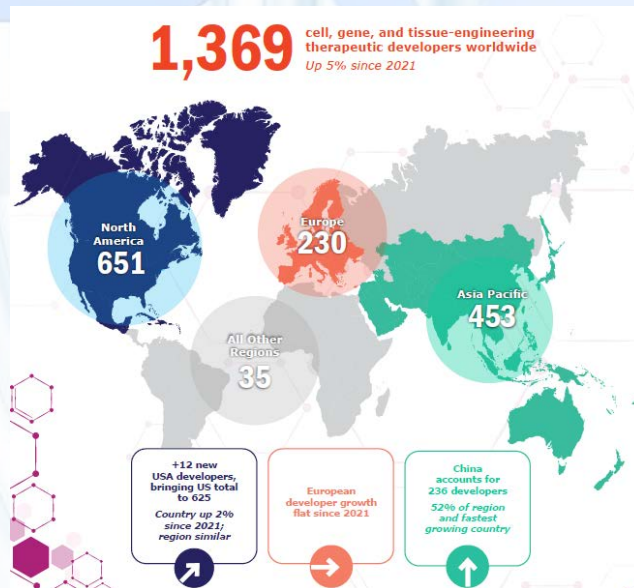
# Hot Topics - Cell Therapy and Gene Therapy / 热点 - 细胞疗法与基因疗法

## 3. 5% increase in cell, gene, and tissue-engineering therapeutic developers worldwide (1,369) / 全球的细胞疗法、基因疗法和组织工程疗法研发机构增加了5% (1,369家)

- **North America** leads with **651** developers (+2% vs. 2021) / 北美以**651**家研发机构领先（比2021年高2%）
- Followed by **Asia Pacific** with 453 (+10% vs. 2021); **China** accounts for 52 and is the **fastest-growing** country / 紧随其后的是亚太地区，有453家（与2021年相比增加10%）；中国有52家，是增长最快的国家

## 4. Downturn in investment activities / 投资活动低迷

- North America: \$5.6B with 53 deals (-68% YoY) / 北美：\$56亿，53笔交易（同比下降68%）
- Asia Pacific: \$675M with 23 deals (-69% YoY) / 亚太：\$6.75亿，23笔交易（同比下降69%）
- Based on current patterns, 2022 is likely to land between **\$9.8B and \$13.5B in total annual investment**, treading back to the levels of 2018 and 2019 / 基于目前的形势预测，2022年的年度总投资可能会在\$98亿至\$135亿之间，重新回到2018和2019年的水平。





# Hot Topics & Opportunities / 热点与机会

## COVID / 新冠

Top pharma companies 2022: **Still riding the COVID wave** / 2022年  
顶级医药公司：依然追逐新冠（研究）的热潮 (Truelove, 2022)

- Continuous engagement (**creating vaccines and therapeutics, and investments in R&D**) in 2021 led to greater revenue and earnings. / 2021年的持续参与（创造疫苗和治疗方法，以及研发投资）获得了更高的收入和收益
- Pfizer:
  - **2021 Revenue at \$81.29B** compared with **\$41.65B** in 2020. / 2021年收入为**\$812.9亿**，2020年为**\$416.5亿**
  - H1 2022 Sales totaled **\$53.40B** versus **\$33.42B** in H1 2021. / 2022年上半年销售额总计**\$534亿**，2021年上半年为**\$334.2亿**
  - **Expecting full-year 2022 revenue of \$98B to \$102B.** / 预计2022年全年收入为**\$980亿至\$1020亿**

## Monkeypox / 猴痘

- Monkeypox Vaccine Maker Seeks Partners in Race to Meet Demand / 猴痘疫苗制造商在满足需求的竞赛中寻求合作伙伴 (Wienberg & Muller, 2022)
  - **“Bavarian Nordic A/S, the only company with an approved vaccine for monkeypox, said it’s no longer certain it can meet demand and is talking to multiple production partners as cases rise across the world.”** / **“Bavarian Nordic A/S是唯一拥有获批猴痘疫苗的公司，该公司表示不确定能够满足需求，并正在与多个生产伙伴洽谈，因为全球的病例在增加。”**





# Outlook – Life After Pandemic / 前景 – 疫后生活

## 1. Data Science in Healthcare / 医疗保健领域的数据科学

- **Real-World Study: RWD & RWE / 真实世界研究: RWD & RWE**
  - **The Real-World Data(RWD) Market** is projected to reach **USD\$2 billion** by 2029 / 真实世界数据(RWD)市场规模预计将在2029年达到**20亿美元** (Meticulous Market Research, Jun 2022).
- **Machine Learning / 机器学习**
  - “Discovering new opportunities through the connection between **AI** and **machine learning**, including retail, banking, **healthcare** and the hospitality industry” / “通过人工智能和机器学习之间的联系发现新的机会, 包括零售、银行、医疗保健和酒店业” (McDowell, 2022).
- **Artificial Intelligence in Healthcare / 医疗保健领域的人工智能**
  - The global **artificial intelligence** in healthcare market size is expected to reach **\$208.2 billion** by 2030, with **expected CAGR of 38.4%** from 2022 to 2030 / 到2030年, 全球人工智能在医疗保健领域的市场规模预计将达到**\$208.2亿美元**, 预计2022年至2030年的复合年增长率为**38.4%** (Research and Markets, 2022).

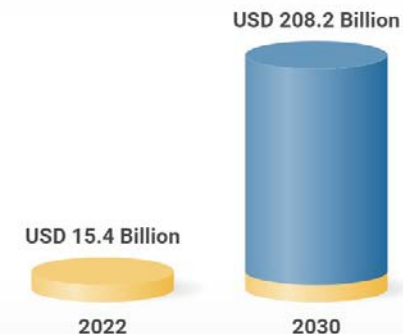
## 2. New immunotherapy: mRNA technology / 新的免疫疗法: mRNA技术

- **COVID Vaccine / 新冠病毒疫苗**
  - Pfizer & BioNtech start COVID-Flu combination vaccine study / 辉瑞和BioNtech开始新冠病毒-流感联合疫苗研究 (Pfizer, Nov 2022).
- **Cancer Vaccine / 癌症疫苗**
  - MSK mRNA Pancreatic Cancer Vaccine Trial Shows Promising Results / MSK的mRNA胰腺癌疫苗试验显示出令人鼓舞的结果 (MSK, May 2022).
  - Cancer vaccine could be available before 2030, says scientist couple behind COVID-19 shot / 研发新冠病毒疫苗的科学夫妇说, 癌症疫苗可能在2030年之前问世 (Business Insider, Oct 2022)



### Global Artificial Intelligence In Healthcare Market

Market forecast to grow at a CAGR of 38.5%



<https://www.researchandmarkets.com/reports/5351653>

**RESEARCH AND MARKETS**  
THE WORLD'S LARGEST MARKET RESEARCH STORE







北美投资讯息有限公司  
NAI Interactive Ltd.

## Contact Us / 联系方式

### Contact Us / 联系方式



@NAI 500



@NAI北美投资讯息有限公司



@NAI Interactive



@北美财经



@NAI500andGCFF



@nai500gcff

Website: [nai500.com](http://nai500.com)

GCFF Events: [gcff.ca](http://gcff.ca)

Email: [tony@nai500.com](mailto:tony@nai500.com)