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Top-20 AI in Drug Discovery Investors Teaser

AI for Drug Discovery, Biomarker Development and Advanced R&D Landscape / 2019 Q1

Companies - 150
Investors - 350
Corporations - 50

Drug Discovery

Advanced R&D

Investors

AI Companies

Corporations



Pharma

Tech

Biomarker
Development



Diversification of AI for R&D and Drug Discovery Process 2019 Q1

Companies - 150
Investors - 350

Companies

Investors

Data Aggregation & Analysis

Drug Design

Clinical Trial Design, Optimization, Recruitment

Repurposing Existing Drugs

Researching Mechanisms of Disease

Design Preclinical Experiments

Preclinical Experiment Execution





Goal and Applications of the Report

Main goal of the analytical report is to identify the most sophisticated investors in the AI for Drug Discovery sector, to analyze their investment strategies and approaches, define the methodology relevant for the agenda of following the pathway of the leading investors in the industry. Hence, the group of the most sophisticated and leading investors should be extracted.

According to this goal, more than 350 investors were analyzed based on the established framework of criteria for ranking. Multiparameter evaluation was conducted in order to define investors with the most effective strategies. As a result, top-20 AI for Drug Discovery investors were identified. It was also analyzed which types of investors are present and what are their investment specifics. Thus, quantitative analysis was enhanced by a qualitative one.

The system of metrics and criteria can be applied for the forecasting and predictive analytics in order to understand which funds will be successful and which ones will not be.

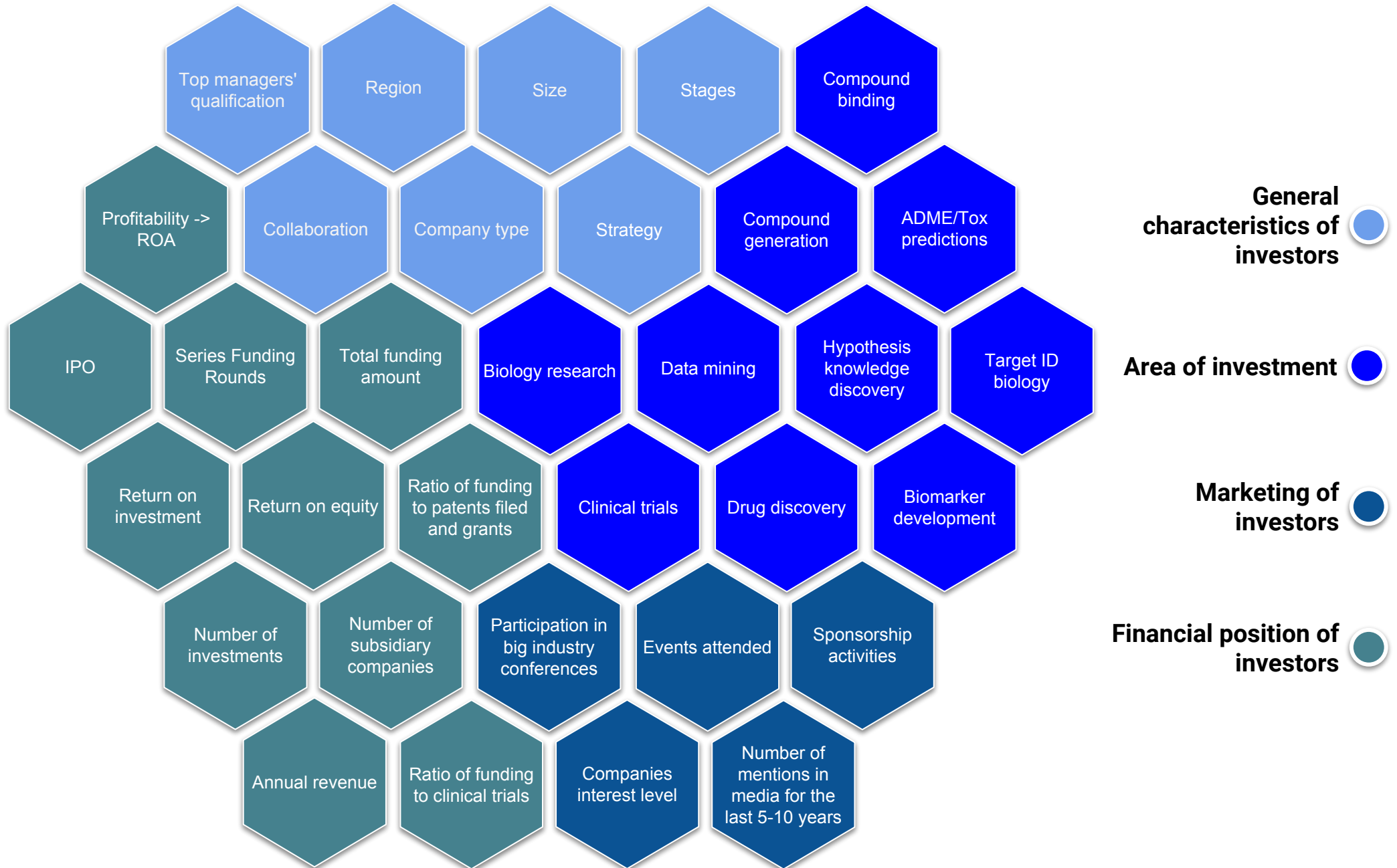
Having conducted comprehensive analysis of leading AI for Drug Discovery investors, we are able to replicate their strategies and to extrapolate their behavior more broadly. These implications can be extremely useful for every institution operating in the field of AI for Drug Discovery. On the other hand, the reasons for failures and ineffective types of strategies and elements of behavior were investigated. This information can be used for avoiding mistakes.

The results of the report can be applied for:

- Defining the best investment strategies for the investment in AI for Drug Discovery sector
- Defining the most prospective investment funds in the industry
- Predicting future dynamics and prospects of AI for Drug Discovery investors (in order to understand which funds to invest in)
- Complex analysis of the whole industry
- Identification of inefficient investment strategies

It is planned to expand the scope of the report in the future and provide a deeper analysis of investors operating in the field of AI for Drug Discovery based on more advanced and sophisticated framework.

Investors Ranking Framework



Methodology

The infographic dashboard on *page 10* displays geographical distribution of top-20 investors into AI-driven advanced healthcare and drug discovery companies. Top-20 Investors are mainly based in the U.S., followed by Chinese, United Kingdom and European Union companies. The infographic on *page 11* outlines the top-20 investors in top-150 AI companies operating in the field of drug discovery and similar industries during 2012-2019. The header displayed at the top of the given infographic shows the key investors, the number of investments deals they made, and the top AI-powered biopharmaceutical and biotechnology companies that obtained funding/assistance.

Data on seed rounds, private equity, corporate rounds, venture funding, grants, as well as other types of funding rounds and non-equity assistance were collected and analysed according to various parameters set forth in Deep Knowledge Analytics evaluation criteria methodology. The top-20 leading investors in AI for drug discovery and advanced health sector have been selected based primarily upon the following criteria:

- Number of investments (from 2 to 9) made in 130 AI-Companies, specializing in Drug Discovery;
- The potential for equity and non-equity financing (lead investors in seed/venture rounds);
- Investors overall background, intangible assets and philosophy.

Within the framework of the given research, data related to over 500 investment deals, concluded by 350 private and corporate investors, were collected. The share of deals concluded in 2018 constituted circa 27% of the total number of investments.

The data table on *page 13* shows the top 10 smart investors in top 25 biotech, biopharmaceutical research and development and advanced healthcare. The basic criteria underpinning the selection of the top 10 investors in the aforementioned industries were as follows:

- Minimum 2 investments in the top 25 AI-companies;
- The volume of funding/financing;
- Investors' intangible assets/capacities.

The trend is that investors keep investing several times in the same companies due to established partnerships and business models that gained credibility.

Investors Strategies

Features and elements of strategies of successful investors in AI for Drug Discovery

Companies to invest in

Investor`s features

Tech expertise

Others

What differentiates successful AI for Drug Discovery investors from unsuccessful ones? Together with common success features (diversification, quantitative metrics, deep industry analysis, risk management tools), there are some industry-specific parameters of investors behavior that contribute to the success in AI for Drug Discovery investment.

Features and elements of strategies of successful investors in AI for Drug Discovery

Executive Summary

Top-20 AI for drug discovery investors belong predominantly to the lists of the biggest and most effective global venture and investment funds that do not specialize exclusively on biotech and pharma ventures but pay high attention to this industry.

Most of the top-20 investors in AI for drug discovery are concentrated on the early stages of investment. Namely, each of the 20 funds provides early stage investment. Only 25% of investors are engaged in debt financing. However, we need to understand that the situation can be different when we observe exclusively biotech or even drug discovery investment. In this case, the aforementioned investors may be relatively more conservative. Thus, the share of late-stage investments may grow.

Overall, investment activity has been steadily increasing in the pharmaceutical AI space over the previous year, judging by an increased number of investment rounds as well as total funds raised. Top-20 funds are not only leaders of investment but in many cases also leaders of growth.

Together, these 20 firms have raised over \$40 billion, with Sequoia Capital alone accounting for roughly a third of that amount. In fact, Sequoia Capital – arguably Silicon Valley’s most eminent venture capital firm, with an impressive investment record that encompasses the likes of Google, Amazon, Apple, and Cisco, just to name a few – has been heavily involved in the healthcare sector.

In the future, we can expect the development and growth of specialized investment in the biotech sector, which can accelerate AI for drug discovery investments even more.

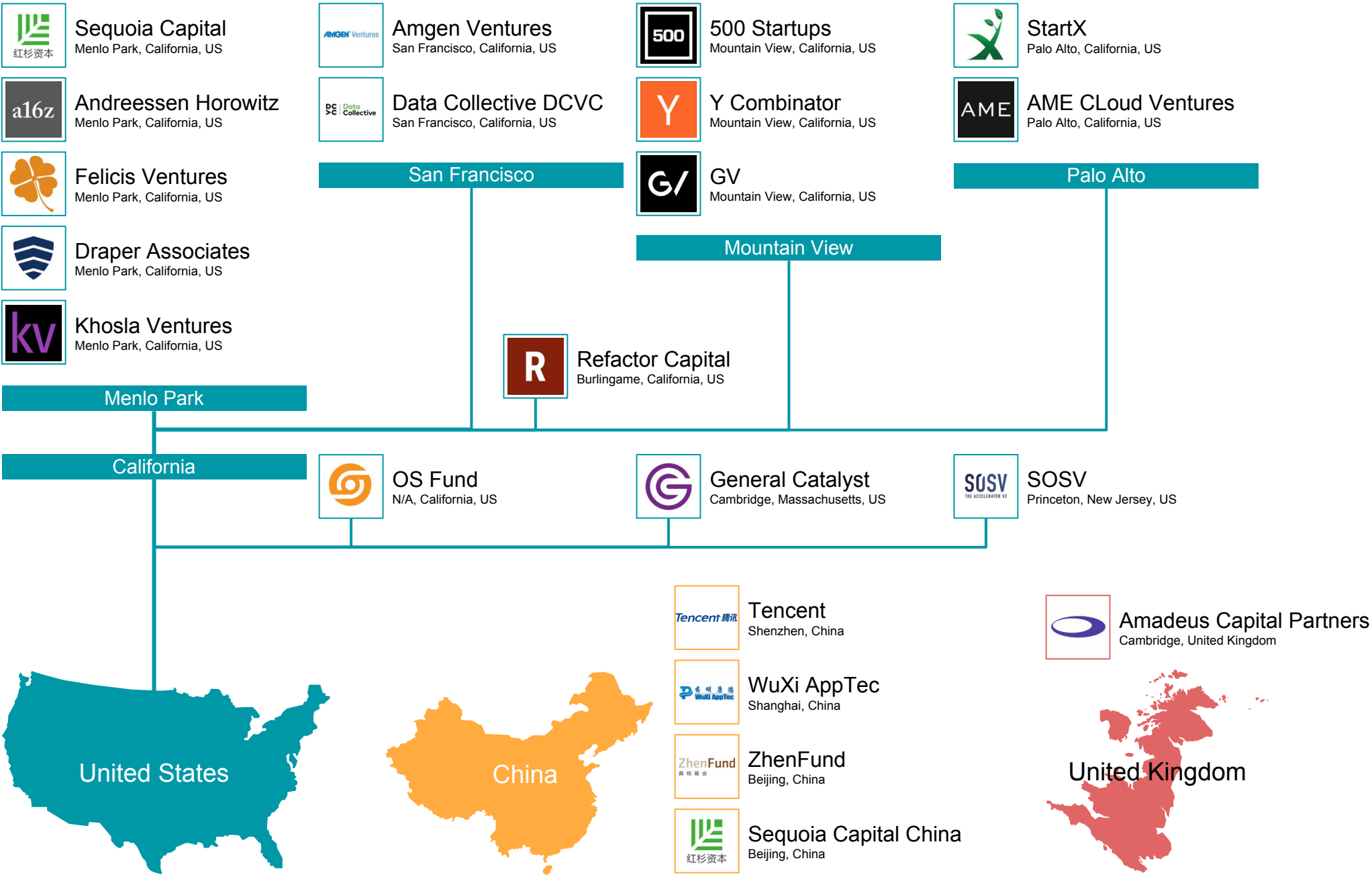
It should be noted that many of top-20 AI for drug discovery investors show some similarities in their investment strategies even on the level of companies, namely Insitro, Atomwise or twoXAR are quite widespread investment targets among them.

Geographic diversity is increasing in the pharmaceutical AI industry, with more countries joining the pharmaceutical AI race and corresponding capital markets. Historically the US has been dominating the space of pharmaceutical AI – both in terms of companies and investments and industry, however, we are seeing an increased level of activity from the UK and EU. We are also seeing a dramatic increase in activity from the Asia-Pacific region generally, and from China in particular. The number of investors based in the Asia-Pacific region, including China and Singapore, increases significantly, with a slew of large investment rounds occurring in the first half of 2019 alone.
















































20 Leading Investors in AI for Drug Discovery Sector

| | | | |
|----|--------------------------|----|-------------------------------|
| 1 | 500 Startups | 11 | GV |
| 2 | Amadeus Capital Partners | 12 | Khosla Ventures |
| 3 | AME Cloud Ventures | 13 | OS Fund |
| 4 | Amgen Ventures | 14 | Refactor Capital |
| 5 | Andreessen Horowitz | 15 | Sequoia Capital |
| 6 | Data Collective DCVC | 16 | SOSV |
| 7 | Draper Associates | 17 | StartX (Stanford-StartX Fund) |
| 8 | Felicis Ventures | 18 | WuXi AppTec |
| 9 | Tencent | 19 | Y Combinator |
| 10 | General Catalyst | 20 | ZhenFund |

Top-20 AI for Drug Discovery Investors



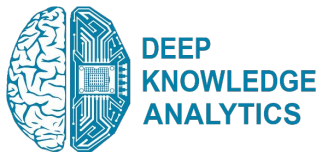
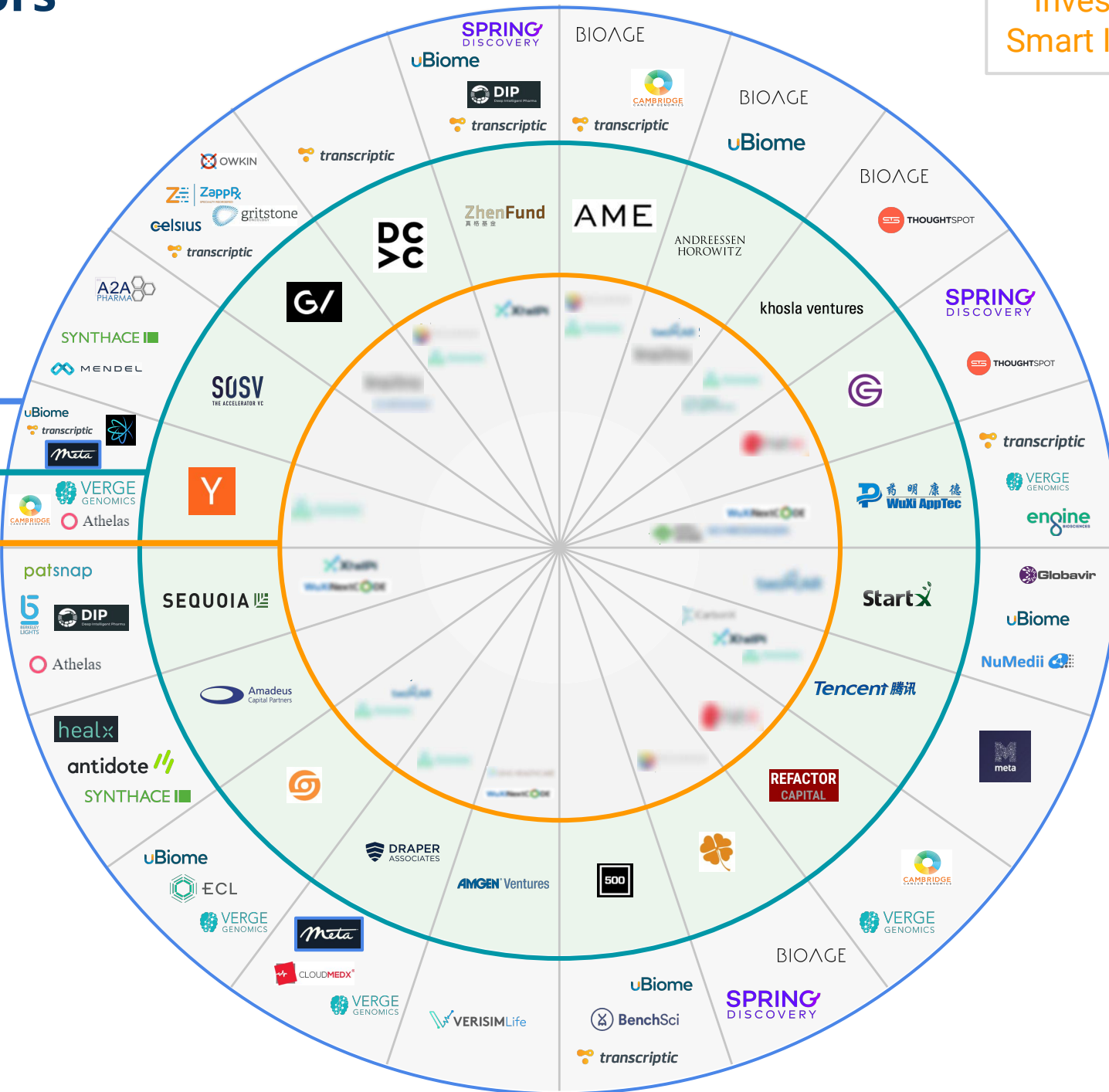
Top-20 Investors in 130 AI-Companies

| Top AI Companies | Investments overall | INVESTORS | | Investments overall | Top AI Companies |
|---|---------------------|---|---|---------------------|---|
|  Atomwise | 9 |  Y combinator |  SEQUOIA Sequoia Capital | 9 |  XtalPi  WuXiNextCODE |
| | 8 |  SOSV SOSV |  OS Fund | 8 |  Atomwise  twoAR |
| SCHRÖDINGER.  Insitro | 8 |  GV GV |  DCVC Data Collective DCVC | 8 |  Atomwise  RECURSION pharmaceuticals |
|  Atomwise  RECURSION pharmaceuticals | 8 |  AME AME Cloud Ventures |  ZhenFund 真格基金 ZhenFund | 7 |  XtalPi |
|  Atomwise  deep genomics | 6 |  khosla ventures Khosla Ventures |  ANDREESSEN HOROWITZ Andreessen Horowitz | 6 |  Insitro  twoAR |
| | 6 |  Amadeus Capital Partners Amadeus Capital Partners |  药明康德 WuXi AppTec WuXi AppTec | 5 |  Insilico Medicine 英科智能  WuXiNextCODE  SCHRÖDINGER. |
|  PathAI | 5 |  G General catalyst |  StartX StartX | 4 |  twoAR |
|  PathAI | 4 |  REFACTOR CAPITAL Refactor Capital |  Tencent 腾讯 Tencent | 4 |  Atomwise  XtalPi  iCarbonX |
| | 4 |  Felicis ventures |  DRAPER ASSOCIATES Draper associates | 4 |  Atomwise |
|  WuXiNextCODE  GNS HEALTHCARE | 3 |  AMGEN Ventures Amgen ventures |  500 500 startups | 3 | |

Top-20 Investors AI in Drug Discovery









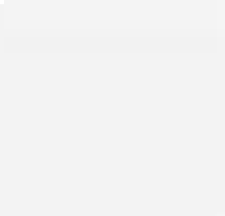






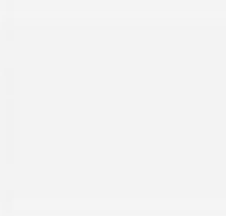
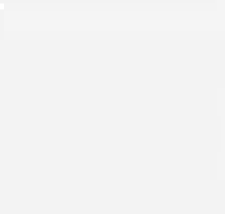






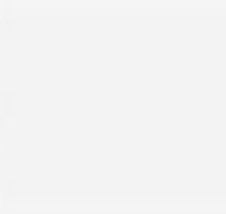
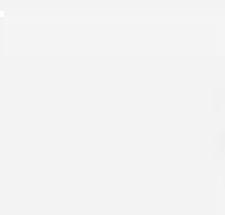






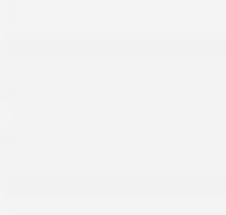
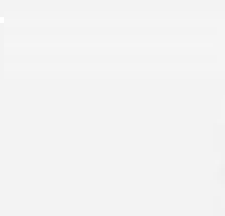






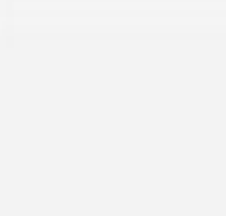
Investments vs
Smart Investments

- Other AI Companies
- Investors
- Top-25 AI Companies



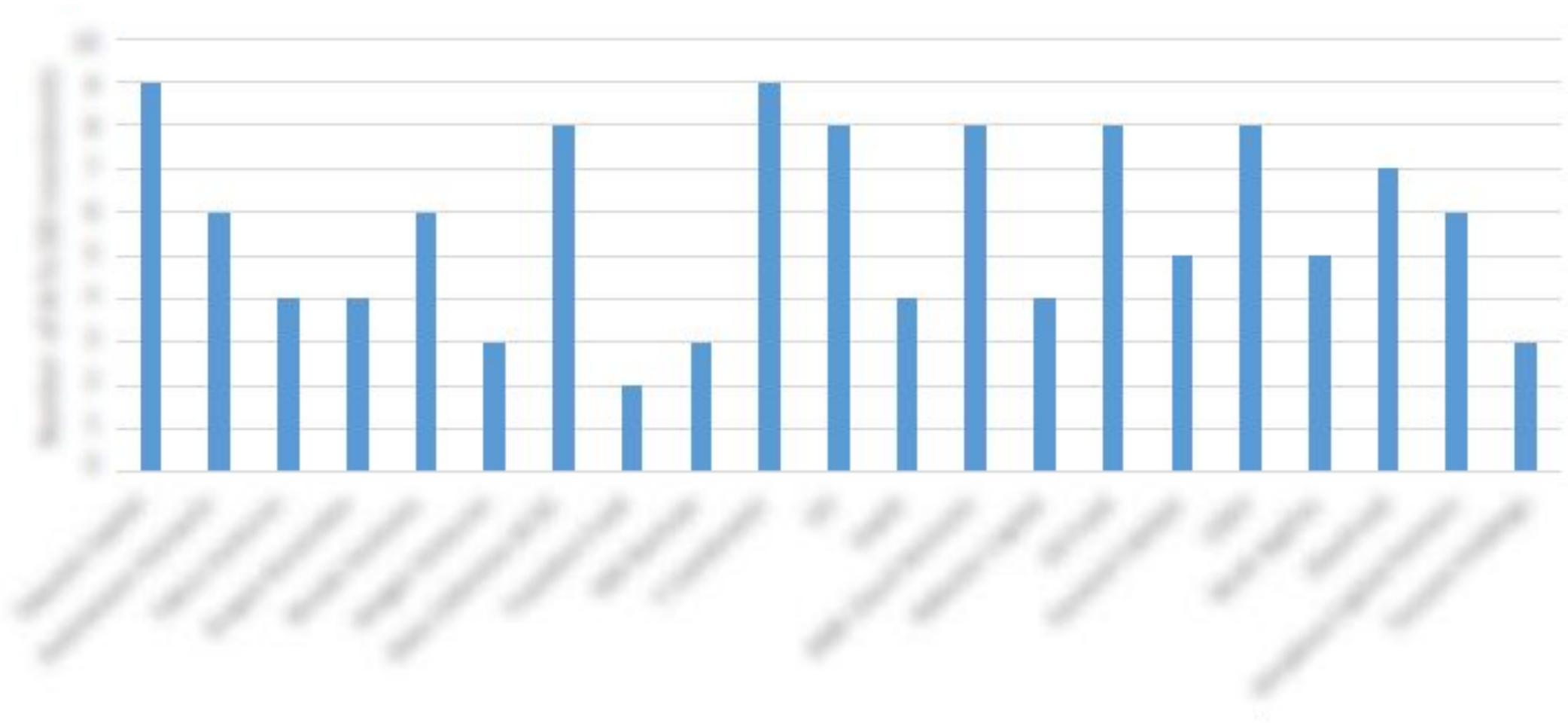
Smart 10 Investors Invested in the Top-25 AI Companies

Top AI Companies ← INVESTORS → Top AI Companies

| | | | | | | | |
|---|---|---|---|--|---|---|---|
|  |  |  |  Tencent |  WuXi AppTec |  |  |  |
|  |  |  |  Andreessen Horowitz |  GV |  |  |  |
|  |  |  |  ARCH Venture Partners |  Khosla Ventures |  |  |  |
|  |  |  |  EPIC Capital |  Sequoia Capital |  |  |  |
|  |  |  |  Data Collective DCVC |  AME Cloud Ventures |  |  |  |

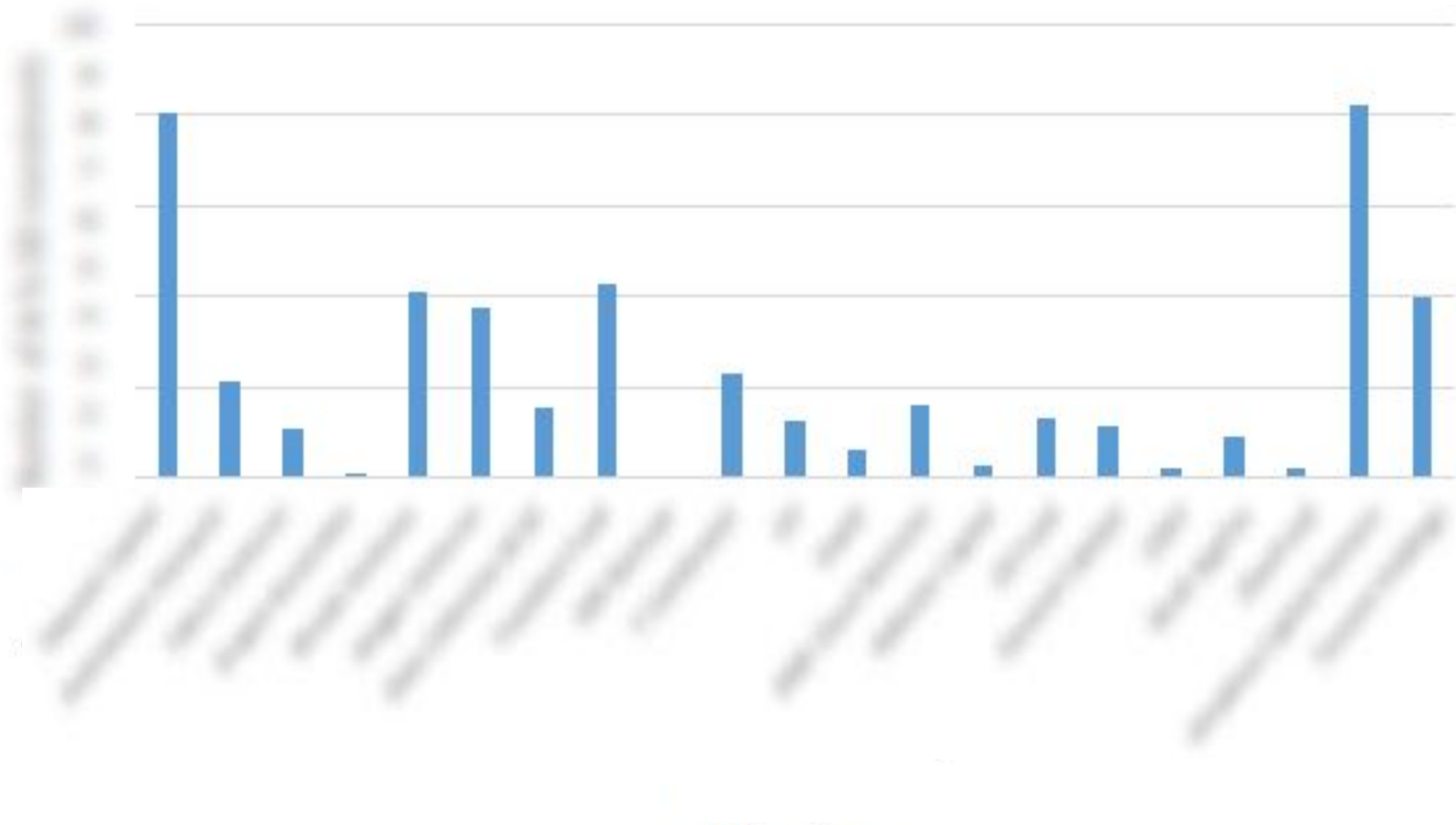
AI for Drug Discovery Investments

The diagram below indicates an overall number of AI for drug discovery investments of 20 leading companies in the given industry. The first position is, obviously, occupied by two biggest leaders in the whole industry – Sequoia Capital and Y Combinator. Both of them had 9 separate investment events. The second position is divided between slightly smaller companies, such as AME Cloud Ventures, Data Collective DCVC, GV, DS Fund and SOSV. All of them invested in AI for drug discovery 8 times. Last 3 positions were taken by the following companies: 500 Startups, Amgen Ventures



How are Investors Healthcare-Oriented? (Q1 2014 - Q1 2019)

The graph below reveals the situation in healthcare investment segment. The first position is, as almost always, held by a stable leader in investment amounts – Sequoia Capital, with a total amount of \$2 billion. Next three positions' indicators are very close to each other and are represented by the following organizations: Founders Fund, Khosla Ventures and Amgen Ventures, with amounts close to \$1 billion. The lowest positions are occupied by Draper Associates, ZhenFunds and 500 Startups, which obviously prefer other investment spheres, rather than healthcare.

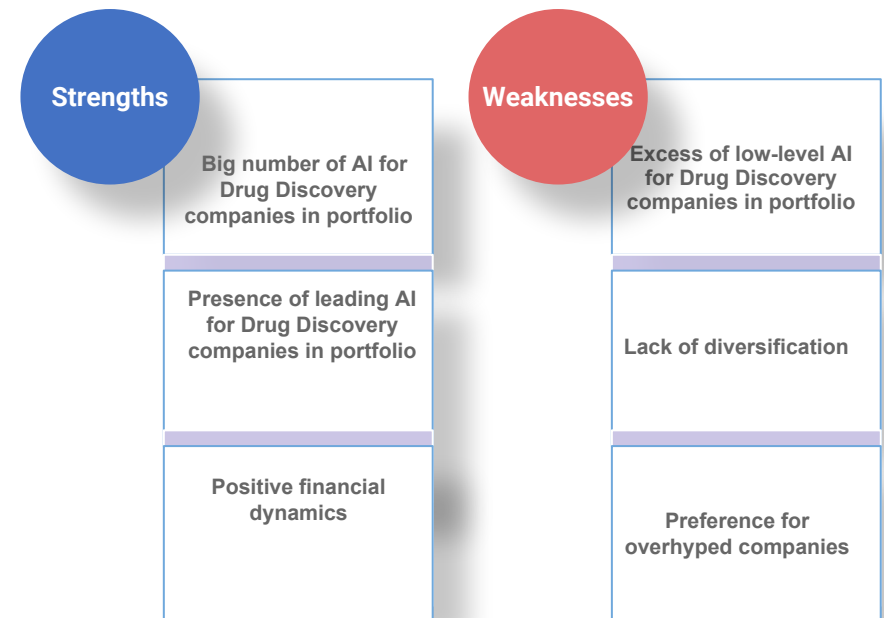
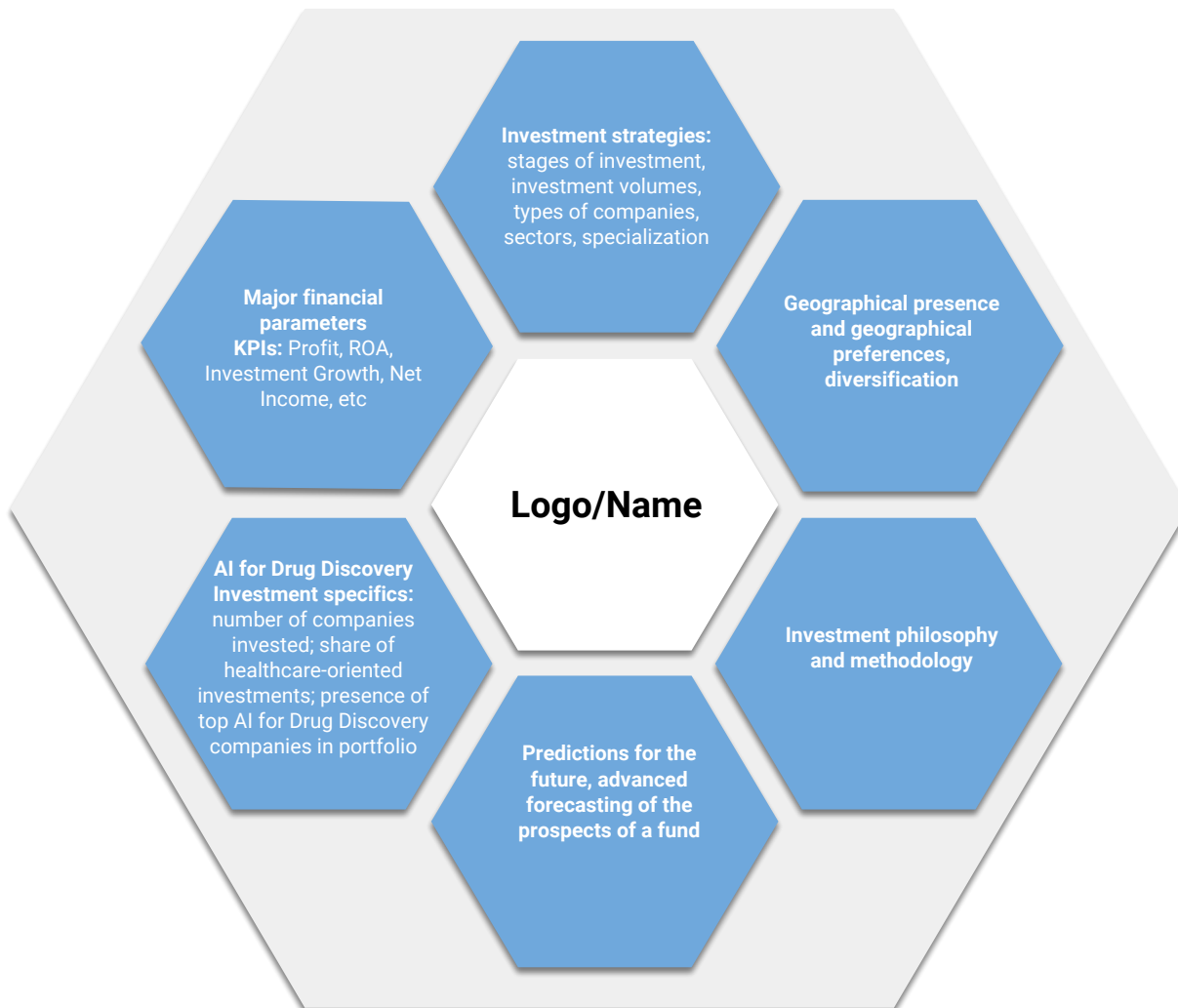


AI for Drug Discovery Investment Specifics

| DRUG DESIGN | DATA AGGREGATION & ANALYSIS | CLINICAL TRIAL DESIGN, OPTIMIZATION, RECRUITMENT |
|---------------------|-----------------------------|--|
| Andreessen Horowitz | Khosla Ventures | Sequoia Capital |
| Felicis Ventures | Founders Fund | Amadeus Capital Partners |
| Draper Associates | GV | |
| Y Combinator | ZhenFund | |
| StartX | Tencent | |
| AME Cloud Ventures | | |
| OS Fund | | |
| WuXi AppTec | | |

Investor Profile Template

The profile template below illustrates a brief picture of the analysis of an investor's current position in the AI for Drug Discovery investment landscape. Each profile serves as a visual comparative executive summary of the investor's activities in this sphere, and will be accompanied by a deeper analysis of these metrics.



Investment strategy specifics

- Key differentiations from other funds
- Preferred domains of AI for Drug Discovery process
- Investment style and its relation to the investment in AI for Drug Discovery



- **Summary**
- **Deliverables of the Report**
- **Proposal for Cooperation**

AI for Drug Discovery and Biomarker Development industry has a large potential to impact the whole biopharma industry essentially. Knowledge of the key investors in this industry is crucial for the survival and development of every company operating in the market.

The key questions regarding analysis and evaluation of AI for drug discovery investors include:

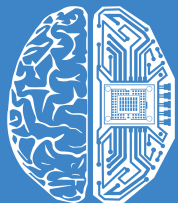
- **What are the major threats and opportunities facing investors in AI for Drug Discovery industry?**
- **What are the main investors in AI for drug discovery field? What are their key features and similarities?**
- **What are their investment strategies and how can biopharma companies benefit from cooperation with them?**

This is a 40+ page report delivering practical answers to these specific questions in order to optimize the short and long-term strategies of biopharma companies, investors and other institutions related to the industry, with a new updated edition being released each quarter, incrementally increasing the precision, practicality and actionability of capital market analysis. Each new edition will provide a more sophisticated, comprehensive and precise understanding of the challenges and opportunities for investors provided by the development AI in biopharma industry, as well as what businesses such as pharma corporations and private biotech companies need to do in order to benefit, rather than stagnate, from the strategies of these investors.

It will deliver:

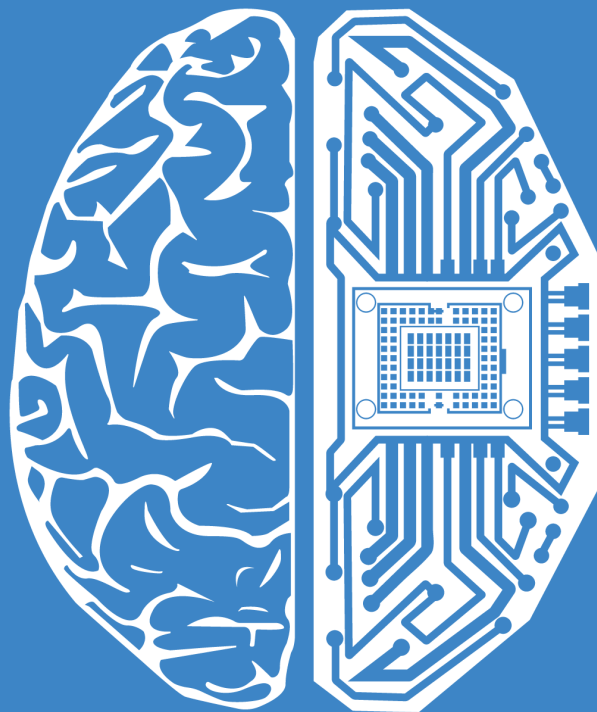
- Comprehensive analysis of the lead investors` strategies in the AI for Drug Discovery and Biomarker Development industry regarding to development trends in particular fields.
- Classification of investors by region, investment type, sector etc. to define optimal portfolio of economic agents
- Forecast on future dynamics and prospects of AI for Drug Discovery investors, their behaviour in the market and assessment of future success of business performance
- Analysis of a investor`s current position in the AI for Drug Discovery investment landscape

The parties who gain early access to this report will have deep expertise on how their strategic agendas can be optimized and stabilized in order to surpass the challenges and to utilize the opportunities related to these novel AI for Drug Discovery investment trends.



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