

# Schrodinger (SDGR) – Taking Drug Discovery to the “Space Age”

## The Most Important IPO in the Past 5 Years

It has been almost 10 years since Tesla went public as the once “Concept Company” has since succeeded in disrupting the transportation industry and has forever changed the performance and commercial acceptance of electric vehicles. While it has been a bumpy road, the stock is now trading at parabolic levels while investors must ask themselves – What stock has the characteristics of Tesla in its early days? The answer is clear – Wall Street's recent IPO, Schrodinger (SDGR).

While the investing public has spent the past week discussing the future of civilian space travel, the **most disruptive software platform to ever hit the pharmaceutical industry, which also happens to be backed by the world’s most sophisticated investors, has just gone public.**

Citron will offer a simple explanation of Schrodinger's business model that has become too complex for television and has not been given the media attention it deserves.

In one paragraph:

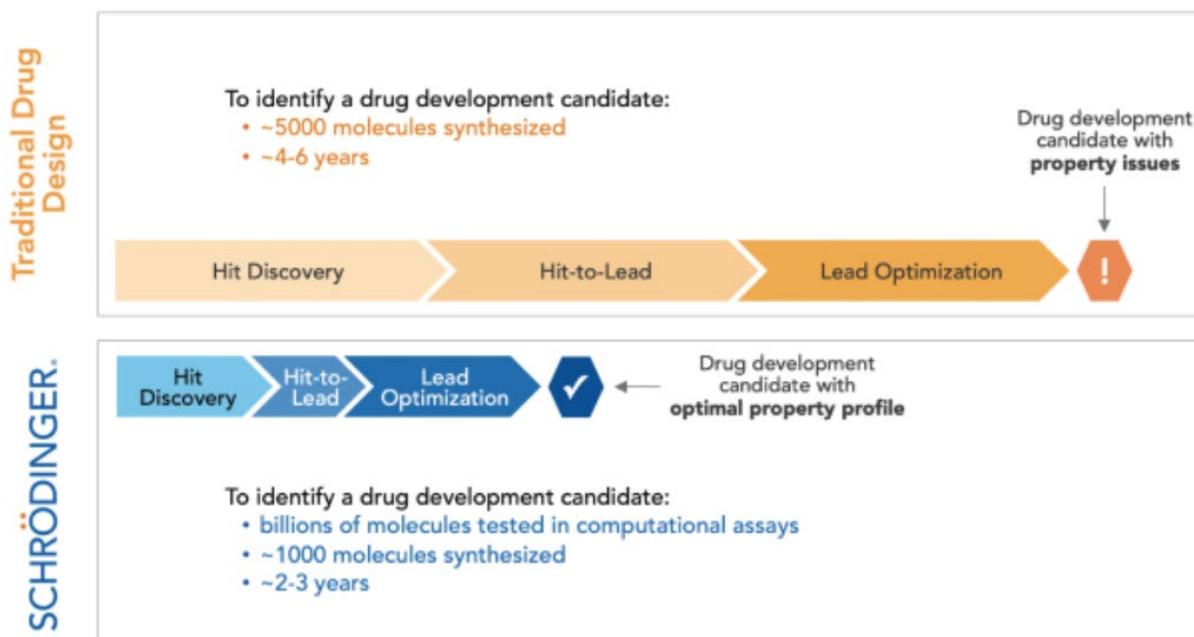
Through use of artificial intelligence and a world class scientific team that is unmatched by ANY public company, Schrodinger has created a software platform that integrates predictive physics-based methods with machine learning to become the leader in molecular simulation that 1) reduces the average time and cost required to identify a drug development candidate and 2) increases the probability of drug discovery programs entering clinical development.

With the global pharma industry spending approximately \$180 billion on R&D annually, this innovative software platform is completely disrupting the drug development process.

Schrodinger’s senior vice-president and chief biomedical scientist best expresses the real and current disruption in [the Financial Times](#):

*“Ms. Akinsanya said the emergence of large genetic data sets had opened up a “whole closet” of potential targets for the industry and that Schrödinger’s*

*technology had created a “deep list” of “very potent molecules” that could become drugs for the targets.”*



## Similarities between Tesla and Schrodinger Too Obvious to Ignore

The similarities between the two companies go beyond them being both named after famous inventors/scientists.

### Disruptive

Both Tesla and Schrodinger were founded on the premise of using technology and software to solve problems of humanity. In the case of Tesla, carbon emissions and Schrodinger, expediting the drug development process through software that advances chemistry beyond limits ever imagined.

Both companies were intent on disrupting large industries with legacy processes that did not take advantage of advancements in artificial intelligence.

### Marquee Investors

Both Tesla and Schrodinger have attracted marquee investors who recognized the importance of their respective technologies.

In the case of Tesla, it was Google's Sergey and Larry and later on in its lifecycle Oracle's Larry Ellison, who all realized that while everyone else was making cars, Musk was focused on a software-driven strategy creating computers on wheels that would eventually win out over the competition.

Schrodinger is even more impressive. The company's two largest investors are Microsoft founder Bill Gates and D.E. Shaw founder David Shaw who collectively own almost 50% of the company, a concentration of ownership never seen at Tesla. Gates does not need description, and David Shaw transformed the hedge fund world using algorithms and has turned focus to computational biochemistry.

<https://moneyinc.com/david-shaw/>

Beyond the “dollars invested” what is significant about the investment of those two men who are known for their intellectual prowess is the validation that Schrodinger is on the forefront of using artificial intelligence and computational chemistry to streamline the drug discovery process.

David Shaw upon his retirement from DE Shaw has dedicated his life to computational biochemistry; Schrodinger is the result of much of this work.

<https://www.deshawresearch.com>

And yes, for you Tesla heads, even Ron Baron has joined the page one shareholder list of Schrodinger.

## Tesla and Schrodinger – Ahead of the Competition

For years Tesla critics have argued that the company will hit a near-term wall due to increased competition. In doing so, the critics disregarded Tesla's battery technology and software solutions, which is now years ahead of anyone.

Similarly, Schrodinger operates in a highly competitive field of software solutions for pharmaceutical drug development. However, with more than 150 Ph.D. scientists and an extensive patent portfolio at Schrodinger, the company's non-promotional and fact-based prospectus reads:

***"We have emerged as the leader in the field of physics-based computational drug discovery, and we believe our computational platform is far ahead of that of our nearest competitors."***

## Why Schrodinger is Even More Compelling than an Early Stage Tesla

Tesla had to use proprietary technology to develop its own consumer brand, which has proven to be a lengthy and capital-intensive endeavor. At IPO, investors did not even know if cars would be ready for production or receive consumer acceptance. To this day, Musk remains a controversial and polarizing CEO. Citron says give respect where respect is due.

In contrast, Schrodinger has gone public at a different stage in its lifecycle. Their science project has already proven to be a viable business as the technology is already licensed by ALL of the top 20 pharmaceutical companies in the world.

It's only two weeks after the IPO and look at their job listings page.

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- Senior Computational Drug Discovery Scientist *Portland*
- Senior DMPK Representative *New York*
- Senior Drug Discovery Biologist *New York*
- Senior Drug Discovery Oncologist *New York*
- Senior Immunology Drug Discovery Scientist *New York*
- Senior Medicinal Chemist *New York*
- Strategic Deployment Manager (Europe) *Paris*
- Structural Biologist *New York*

Not only have the top 20 pharmaceutical companies, measured by revenue, ALL licensed Schrodinger's solutions, researchers around the world at more than 1,250 academic institutions use Schrodinger's software. Schrodinger has also published over 400 peer-reviewed papers that demonstrate the strength of the company's physics-based approaches.

<https://www.schrodinger.com/publications>

The runway for growth is massive and we already see increasing adoption of Schrodinger's software by more and more large pharma customers as illustrated by the increasing number of customers with an annual contract value (ACV) of more than \$100K and \$1MM.



It is also worth noting that the customer retention rate for customers with an ACV over \$100K was over 96% in 2018 and each of the previous five fiscal years.

## Extensive Pipeline

The Schrodinger software platform is so compelling that their customers are also partnering with them in the creation of new drugs. Schrodinger has built an extensive pipeline of both partnered and wholly owned drug discovery assets while two cancer drugs — ivosidenib from Agios and enasidenib, now marketed by Agios and Celgene — have already been approved by the FDA.

Schrodinger is currently collaborating on more than 25 drug discovery programs with more than ten different biopharmaceutical companies (e.g., Sanofi, Takeda, etc.).

Since 2018, the company has launched five internal, wholly-owned programs with plans to begin to initiate investigational new drug enabling studies for the programs by the first half of 2021.

## Wholly-owned programs

	PROGRAM	DISCOVERY	IND ENABLING	CLINICAL
SCHRODINGER.	<b>SDGR1</b> Esophageal and Lung Cancers			
	<b>SDGR2</b> Ovarian, Pancreatic, Breast, and Lung Cancers			
	<b>SDGR3</b> BTK-Resistant / Relapsed Lymphomas			
	<b>SDGR4</b> Renal Cell Carcinoma			
	<b>SDGR5</b> KRAS-Driven Cancers			

Schrodinger's current programs are focused on discovering and developing inhibitors for targets in DNA damage response pathways and genetically defined cancers. The company plans to focus on increasing the number of wholly-owned programs and to expand into other therapeutic areas in the future.

## Conclusion

Consider this – the global pharma industry is spending approximately \$180 billion on R&D annually vs. global automakers spend \$125 billion on R&D.

Schrodinger is completely disrupting the traditional drug discovery process and yet the market cap is only \$2 billion despite:

- The top 20 global pharmaceutical companies have ALL licensed Schrodinger's solutions
- Researchers around the world at more than 1,250 academic institutions use Schrodinger's software
- Management and the scientific advisory board are world class
- The understanding that Schrodinger is a software platform and 50% of the company is owned by Microsoft founder Bill Gates and D.E. Shaw founder David Shaw – two of the most successful software tycoons in the world today

With the massive premiums being paid for pharma companies with disruptive drug assets, Citron expects Wall Street to quickly re-rate Schrodinger shares much higher.

## Cautious Investing to All

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