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Zacks Small-Cap Research

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Steakholder Foods (STKH-NASDAQ)

UPDATE: The company reported 3rd quarter 2022 results which were largely in line with expectations. The company continues to make progress and is on track with its go-to-market plan.

Utilizing a DCF valuation process containing conservative estimates combined with other valuation methodologies, we believe STKH could be worth $8.00. There is a wide range of outcomes which could materially increase or decrease our target price.

Current Price (3/23/23)	$0.68
Valuation	**$8.00**

OUTLOOK

Steakholder Foods (formerly MeaTech 3D) is a food technology company that seeks to produce food products or technologies that provides an alternative to industrialized animal farming that reduces carbon footprint, minimizes water and land usage, and prevents the slaughtering of live animals. The company hopes to develop a modular factory design which will be able to offer a sustainable solution for producing a variety of beef, chicken and pork products, both as raw materials and whole cuts. Steakholder has sufficient funding at this time for its operational plans through the middle of the 2nd quarter of 2023.

SUMMARY DATA

52-Week High	**$5.27**
52-Week Low	**0.61**
One-Year Return (%)	**-87.1**
Beta	**N/A**
Average Daily Volume (sh)	**72,309**
Shares Outstanding (mil)	**145.1**
Market Capitalization ($mil)	**$24.3**
Short Interest Ratio (days)	**N/A**
Institutional Ownership (%)	**1**
Insider Ownership (%)	**N/A**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**N/A**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/A**
P/E using 2022 Estimate	**N/A**
P/E using 2023 Estimate	**N/A**

Risk Level	**Above Avg.**
Type of Stock	**Small-Growth**
Industry	**Food Technology**

ZACKS ESTIMATES

Revenues
(in millions of $)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2021	0.00 A	0.00 A	0.00 A	0.00 A	0.00 A
2022	0.00 A	0.00 A	0.00 A	0.00 E	0.00 E
2023	0.44 E	0.88 E	0.88 E	1.31 E	3.50 E
2024					24.00 E

EPS / Loss Per Share

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2021	-0.03 A	-0.04 A	-0.04 A	-0.05 A	-0.16 A
2022	-0.04 A	-0.03 A	-0.02 A	-0.04 E	-0.15 E
2023	-0.04 E	-0.04 E	-0.02 A	-0.03 E	-0.12 E
2024					-0.10 E

Quarterly revenues may not equal annual revenues due to rounding.
Quarterly EPS may not equal annual EPS due to rounding or dilution.

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WHAT'S NEW

Financial Review

Steakholder Foods (formerly MeaTech 3D) reported 3rd quarter 2022 financial results on November 23rd, 2022, which were mostly in-line with our expectations. Quarterly EPS was a loss of ($0.017) which was slightly better than our EPS estimate of ($0.03).

Research and development expenses came in at $2.8 million during the quarter compared to $2.0 million for the 3rd quarter of 2021. The increase reflects the company's growing investment in R&D as it continues to expand its cultivated meat technology capabilities primarily through increased headcount, consumable materials, and raw materials.

Marketing expenses totaled $0.47 million compared to $0.27 million in the prior year period. General and administrative expenses were $1.3 million in the quarter compared to $1.8 million in the 3rd quarter of 2021. The decrease in G&A expenses were attributed to lower insurance costs and share-based payment expenses in the current quarter.

Operating loss was ($2.5) million compared to ($3.9) million in the prior year period due to the decrease in operating expenses mentioned above. Cash flow used in operations for the 9-month period came in at ($9.8) million and capital expenditures totaled $2.7 million.

Cash and cash equivalents were $11.2 million at the end of the 3rd quarter compared to $19.2 million at year-end 2021. On July 5, 2022, the company raised gross proceeds of $6.5 million in a secondary equity offering. The company has no outstanding debt and no major liabilities with the exception of ongoing lease obligations.

The company does not provide quarterly or annual guidance at this time.

Steakholder Foods CEO and founder Arik Kaufman stated, *"We are very pleased with the progress we have made over the past few months and are on track with our go-to-market plan. We have significantly advanced our technology, as demonstrated by our recently granted patents in key regions, and we continue to cement our position as a technological leader in the cultivated meat space. This has also helped us add some key collaborations to our business development efforts. And finally, our recent rebranding efforts reflect our vision, direction and differentiators. We are working hard to bring the revolution to the mass market so that everyone can continue to enjoy healthy, delicious, real meat but in a more sustainable way for the planet."*

Recent News

Steakholder Foods® Announces Strategic Restructuring Plan for Peace of Meat to Focus on a Cultivated Avian Product Launch for the Singaporean Market

On March 7, 2023, the company announced a restructuring plan for Peace of Meat aimed at supporting the submission of a cultivated avian food product for regulatory approval in Singapore, the first, and so far, only country that has completed the approvals process for the consumption of cultivated meat. As part of this plan, the company will be implementing a series of changes designed to streamline its operations and position it for success.

Steakholder Foods® Achieves 50X Yield in Cell Production Using a Filtration System

On January 25, 2023, the company announced that it has developed a process that has achieved 50 times more growth in cell production yield than previously. This breakthrough process uses a filtering system integrated with the company's growth method and is expected to result in greater outputs.

Business Updates

Collaborations

In July 2022, Steakholder Foods signed a memorandum of understanding with Umami Meats, a Singaporean cultured seafood company. This collaboration opens a door for both companies into the Asian market, particularly in Singapore, which is currently the only country that has authorized the production and distribution of cultivated meat. Steakholder Foods also sees this collaboration as an opportunity to make a valuable contribution to the preservation of marine ecosystems and wildlife.

Research & Development

In July 2022, Peace of Meat, the company's wholly owned Belgian subsidiary, announced the establishment of a stable and unique avian cell line with a clear upscaling path. Peace of Meat's cultivated avian capabilities provide a clear path to commercialization in the hybrid foods market.
In August 2022, the company announced its initiation of cultivated pork development using a porcine cell line with significantly greater lifespan and scalability. The company announced in November 2022 that it successfully differentiated porcine fat cells from its induced pluripotent stem cell line. This is a major step forward in the company's ability to develop high-quality 3D-printed whole-cut pork products at large scale.

In September 2022, the company introduced Omakase Beef Morsels, a revolutionary, richly marbled structured cultivated meat product developed using Steakholder Foods' unique 3D-printing process. This was Inspired by the marbling standard of Wagyu beef. According to the company, this product was an innovative culinary achievement, elegantly designed as a meat-lover's delicacy for premium dining experiences. The product is made up of multiple layers of muscle and fat tissue that have been differentiated from bovine stem cells and showcases the technology's exceptional control and flexibility.

Patents

In October 2022, the company filed a provisional patent application with the U.S. Patent and Trademark Office (USPTO) regarding methods and systems for adipocytes differentiation. The patent application details a new and improved process for differentiating stem cells into fat and is more easily reproducible and cost-effective than current methods.

In October 2022, the company was granted a patent by the USPTO for systems and methods to apply external forces to muscle tissue that result in the development of high-quality complex structured meat. In November 2022, the company was granted the equivalent patent in Canada. This patent is another boost to the company's growing global patent portfolio. The process behind the patent represents a breakthrough in the methodology and technology used to "exercise" muscle tissue to achieve a desired texture. It is a mimicking of natural muscle development that occurs when animals roam or graze.

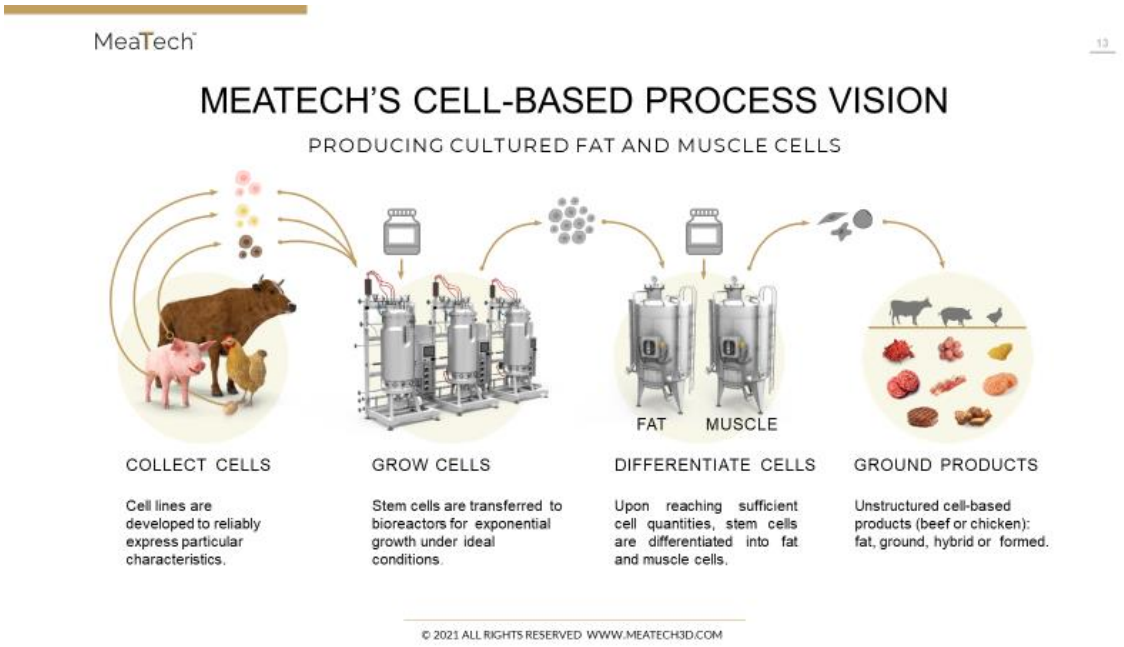
In November 2022, the company filed a provisional patent application for the mimicking of the texture of cooked fish. The company achieved the unique flaky texture of fish using its new approach along with its proprietary 3D printing technology and custom-made bio-inks. The new methodology is expected to enable the production of a wide variety of fish, seafood and related cuts. The provisional patent application puts the company on a path toward global leadership in the field of structured cultivated fish production.

Marketing and Branding

In August 2022, the company rebranded itself as Steakholder Foods Ltd. and changed its ticker on the Nasdaq stock market to STKH. The new name and brand reflect the company's commitment to cultivating a new community of meat lovers who wish to support and participate in the company's mission to make high-quality real meat sustainably. Steakholder Foods has recently received a registered trademark in Japan, reflecting plans to penetrate the Japanese market and other markets in the Asian region.

In September and October 2022, the company participated at the Future Food-Tech Summit in London and the World Congress of Food Science & Technology in Singapore. The company showcased its 3D bioprinting capabilities, allowing visitors to 3D print their own personalized steaks. This helped generate a significant amount of general interest, traction and leads.

In November 2022, the company hosted its first US tasting event. Guests were treated to a variety of hybrid canapes with cultivated meat that was grown from cells sourced from Texas cattle. The event also included a live 3D printing demonstration with attendees given the opportunity to print personalized steaks. The event brought together top leaders from the industry and included a panel discussion entitled, "The Future of Food and Our Planet." The event was covered by major media outlets.



Source: Steakholderfoods.com/

KEY INVESTMENT POINTS

- Launched in 2019, Steakholder (NASDAQ:STKH) is a pre-revenue food technology company based in Israel and Belgium with over 60 employees at this time.
- The company believes that cultivated meat technologies hold significant potential to improve food security and meat production, simplify the meat supply chain, and offer consumers a tasty range of new food product offerings. The company aims to provide an alternative to industrialized animal farming that reduces carbon footprint, minimizes water and land usage, and does not require animal slaughter.

- Steakholder's core processes involve collecting animal cells, growing cell cultures, differentiating them into fat and muscles cells, and then creating unstructured cell-based meat products. Eventually, the company plans to scale a 3D bio-printing technology to create structured meat products such as steak.

- In December 2021, the company successfully printed a 3.67oz (100 gram) cultivated steak comprised of real, living muscle and fat tissues, without using any soy or pea protein. This was the largest living tissue 3D printed ever, to the best of the company's knowledge.

- The company plans a go-to-market strategy that encompasses both a B2B and B2C approach. The company may work with established food product companies as well as alternative plant-based companies by providing cultured fat or muscle products or hybrid products.

- Conventionally farmed beef products can be environmentally unfriendly as it requires substantial amounts of land, feed, water and also contributes significantly to greenhouse gas emissions.

- The addressable market of meat, meat substitutes, and cultured meat is expected to reach $1.0 trillion by 2025. In the subsequent 15-year time frame, cultured meat is expected to have the highest growth rate followed by plant-based meat alternative with conventional meat products showing a decline.

- The company went public in January 2020 on the Tel Aviv Stock Exchange and became listed on the NASDAQ in March 2021.

- Steakholder currently has $11.2 million of available cash per its latest financial report as well as considering proceeds from an equity offering in July 2022. The company is likely funded to support its operations through the middle of the 2nd quarter of 2023.



Source: Steakholderfoods.com/

OVERVIEW

Steakholder Foods is a pre-revenue, developmental stage food tech company that aims to revolutionize the meat product industry by providing a cell-based alternative to industrialized animal farming that reduces carbon footprint, minimizes water and land usage, and prevents the slaughter of animals.

The company is developing cultivated meat technologies which include cultured growth of cells to produce biomass and differentiated fat and muscle cells for various food applications. For example, these cells could be added to existing plant-based alternative protein products as well as forming the basis of

unstructured meat products, such as ground beef and or chicken nugget-style poultry products in order to improve taste and texture relative to current plant-based alternatives.

Further development efforts include the creation of structured products (such as steak) by utilizing a novel, proprietary three-dimensional bioprinter to deposit layers of differentiated cells, scaffolding, and cell nutrients in a three-dimensional form of structured cultured meat.

The cultured meat production processes that are being developed are intended to offer customers an alternative to industrial slaughter, have the potential to improve the quality of the environment, shorten global food supply chains, and reduce the likelihood of health hazards such as zoonotic diseases transferred from animals to humans (including viruses, such as virulent avian influenza and COVID-19, and drug-resistant bacterial pathogens, such as some strains of salmonella).

In December 2021, the company announced that they had successfully three-dimensionally printed a 3.67 oz cultivated steak, primarily composed of cultivated fat and muscle tissues. Currently, some cultivated meat companies have made some progress developing unstructured alternative meat products such as minced meat or sausage. However, the industry has been largely unsuccessful at producing a high quality, high-value structured cultured meat products such as a steak.

In February 2021, Steakholder announced had completed the acquisition of Peace of Meat, a Belgian company that has made advancements in developing cultured avian meat directly from using cells extracted from eggs. This acquisition provided the company with another important avenue of cultured meat development in the form of avian cultured cell products, in addition to their core beef-related research and development.

The Company has begun planning the establishment of its pilot plant to develop cultured meat products which it hopes to complete by the middle of 2023. Commercial revenues from cultured meat products such as cells or cultured fat or muscle could occur in that year and be material in 2024. The structured meat products from 3D bio-printing technologies could be ready as soon as 2025.



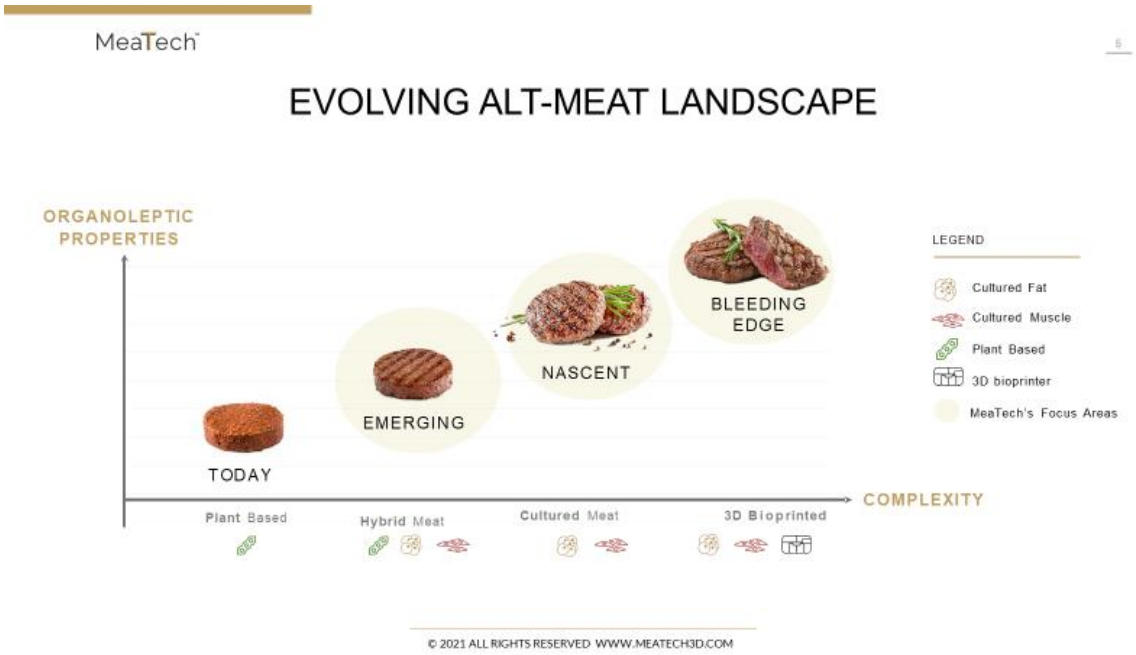
Source: Steakholder3d.com/

Steakholder has a unique and perhaps unprecedented opportunity to attract and perhaps bring together communities that may be in opposition or conflict on the surface. The company's vision to bring together a meat-loving culture with an environmentally friendly community may be unparalleled in todays society and has the potential to create substantial shareholder value going forward.

In October 2021, the BlueSoundWaves collective (now called Sound Ventures), led by actor Ashton Kutcher, Guy Oseary and Effie Epstein, partnered with the company with the goal of accelerating growth and development toward commercializing proprietary cultured meat production technologies. The organization works closely with Steakholder management to advance their strategy, go-to-market activities and brand by leveraging the collective's marketing and strategic expertise and network.

Cash balances as of 9/30/22 stood at $11.2 million and the company has no material long-term debt. With a quarterly burn rate of approximately $5 million per quarter, the company is funded until approximately the middle of the 2nd quarter of 2023.

ALTERNATIVE MEAT LANDSCAPE



Source: Steakholderfoods.com/

There are expected to be roughly four stages of progression in the alternative meat industry. Currently the landscape is primarily comprised of Plant-Based meat substitutes produced by leading industry players such Beyond Meat (BYND), Impossible Foods (Private), and MorningStar Farms, owned by the Kellogg Company (K).

The second stage, and likely the first area of commercial revenues for Steakholder, is the Hybrid Meat segment. This entails taking existing plant-based meat offerings from other companies and combining

them with Steakholder's cultured fat or cultured muscle cells. This combined product should greatly enhance the organoleptic properties of these products, namely aroma, texture and color.

The third stage involves pure cultivated meat in an unstructured format derived solely from cultured cells. This would produce products such as ground beef or minced meat. The cell technology the company is developing to create these products is explained below.

The fourth evolution of cultured meat products and somewhat the holy grail, is a fully structured meat product such as a steak. This technology builds on previous processes developed by the company and includes bio-inks, which are biological materials used for 3D bio-printing to create specific structures such as formed steaks. The last part of the process involves an incubation period. The successful completion and viability of this technology is not expected until 2025.

The industry still faces many challenges, yet surveys are consistently showing consumer openness toward cultivated meat. According to the Consumer Acceptance of Cultured Meat: An Updated Review (2018–2020) published by researchers at the University of Bath:

"…the evidence suggests that, while most people see more societal benefits than personal benefits of eating cultured meat, there is a large potential market for cultured meat products in many countries around the world. Cultured meat is generally seen as more acceptable than other food technologies like GMOs, and more appealing than other alternative proteins like insects. Although it is not as broadly appealing as plant-based proteins, evidence suggests it may be more uniquely positioned to appeal to meat-lovers who are resistant to other alternative proteins, and it is more appealing to certain demographic groups".

RISKS

- Steakholder is a development stage company that generates no revenues and is not currently marketing products or services. It has generated significant losses since inception that will continue for the foreseeable future. The accumulated deficit as of 12/31/21 was $37.0 million.

- The company will require additional capital to complete its vision of manufacturing and marketing hybrid meat products, cultured meat products, and structured meat products. The company's annual operating expenses including research & development are expected to be approximately $20 million in 2022. The capital markets, which includes both equity and debt sources, may not always be available during times of economic distress.

- Although the company plans on pursuing multiple avenues of marketing its products including both Business-to-Business and Business-to-Consumer applications, the company's success at this time is solely reliant on hybrid meat, cultured meat, structured meat, and related products. The company has not indicated other sources of revenues other than this particular industry.

- If the business is successful, the company will have to manage addition design projects, materials procurement processes, develop comprehensive marketing plans and significantly expand relationships with suppliers, distributors and end customers. These additional responsibilities will incur additional costs and consume further management resources.

- The manufacture and marketing of food products is highly regulated. Cultured or structured meat is currently not available to be marketed in the United States and must be approved by the United States Department of Agriculture (USDA) and the U.S. Food and Drug Administration (FDA). There is no clear regulatory framework or timeline for these approvals however the company expects these authorizations to occur in 1-2 years.

VALUATION

Although our projections haven't materially changed, we are lowering our valuation target based on higher prevailing interest rates which raises the discount rate in our discounted cash flow calculation.

According to an A.T. Kearney study, the global meat market is expected to reach $1.4 trillion in sales by 2030. The study estimates cultured meat will comprise 10% of that addressable market, or $140 billion. Another study by McKinsey & Company estimates the global addressable market could reach $25 billion by 2030 (*Cultivated Meat: Out of the lab, into the frying pan, June 2021*). Using the more conservative estimates from McKinsey, if Steakholder was to obtain a 2.0% market share of the cultured meat industry, revenues in 2030 could exceed $500 million.

Our primary valuation tool utilizes a Discounted Cash Flow process and produces three different scenarios.

Bull Case – The company experiences some form of success in all of its four key developmental products – hybrid meat, cultured unstructured meat, 3D printed structured meat, and licensing/partnership arrangements. Over a long-term time frame, this could produce 2030 revenues of approximately $500 million. Under this scenario, assuming average food industry margins, the derived value is $11.00 and we apply a probability factor of 50%.

Base Case – The company achieves success in selected developmental programs, primarily hybrid meat applications and unstructured meat products. Under this scenario, revenues in 2030 could be approximately $300 million. This would create a value of $8.00 and we apply a probably factor of 35%.

Bear Case – The company fails to create material revenue or profit opportunities from cultured meat or structured meat products and relies on partnership or licensing arrangements for revenues. The value in this scenario is roughly the current stock price of $3.19 and we apply a probability factor of 15%.

The weighted average price target of these three scenarios is $8.78. The discount rate was raised to 12.0% to account for today's higher interest rate environment.

HISTORICAL STOCK PRICE



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