

Oragenics, Inc.

Reports Q1. Expect Q3/Q4 IND filing for its COVID-19 vaccine. Key upcoming development milestones should drive stock. Lowering P/T to \$2.00.

Reports Q1: Oragenics recently (on May 13) reported its Q1 2022 (ending March) results. Net loss was \$6.0 million or EPS of \$(0.05) compared with our estimates of \$(0.02). There was no guidance or consensus estimates. Oragenics is a clinical stage drug development company so it generates minimal revenue.

Operating expenses: Operating expenses were \$6.1 million, up from Q4 2021's \$2.4 million as it had higher pre-clinical development activities.

No guidance: Management did not provide forward guidance.

Estimate change: We are lowering our 2022 EPS estimate to \$(0.19) from \$(0.13).

Focused on the Terra CoV-2 vaccine candidate: The company is focused on its Terra CoV-2 immunization vaccine candidate to combat the novel coronavirus pandemic. The company holds a nonexclusive intellectual property license from the National Institutes of Health (NIH) to the prefusion stabilized spike protein vaccine candidate. The stabilizing of the spike protein in the pre-fusion state may permit the number of immunogenic centers to be increased. This could allow for greater antibody binding, and improved immunogenic responses.

Large market potential: COVID-19 has infected ~80 million in the U.S. and has been attributed to over 974,000 deaths in the 2 years since it was discovered in the U.S. Although there are 3 vaccines currently approved for use in the U.S. (Pfizer, Moderna, J&J), we believe there are a large market opportunity for more as the coronavirus may be a persistent ongoing virus.

Terra CoV-2 vaccine benefits: The company believes its vaccine has several advantages: 1) The NIH-created stabilized pre-fusion spike protein. Using the stabilized pre-fusion spike protein antigen should lead to a greater immune response as measured by neutralizing antibody titers. 2) Access to a novel rationally designed adjuvant. Its Terra CoV-2 vaccine should provide long lasting protection from the SARS-CoV-2 virus with only one or two doses, with a more rapid immune response compared to vaccines developed without the inclusion of an adjuvant. 3) Standard vaccine storage and distribution conditions.

IND expected in Q3/Q4 2022: We expect the company to file an IND (Investigational New Drug) application with the FDA for its Terra CoV-2 vaccine candidate in Q3/Q4 2022. The company expects to have a pre-IND meeting with the FDA in July 2022.

Pre-clinical study: The company just initiated (in March) a toxicology study to evaluate the safety profile and immunogenicity of its NT-CoV2-1 vaccine candidate in rabbits. The study is designed to provide Investigational New Drug (IND)-enabling data to help advance this candidate to human clinical studies. The top-line interim data is expected in Q3.

Balance sheet: As of Q1, the company has \$21 million in cash. We believe the company has enough cash through 2022.

Positive high risks versus high rewards: Oragenics's vaccine still have long development and commercialization (late 2023 at the earliest) challenges ahead, but we believe the ~billion dollars market potential presents high rewards for the risks.

Maintaining BUY: We are maintaining our BUY rating, but lowering our 12-month price target to \$2.00 from \$2.25 which is based on an NPV analysis. This represents significant upside from the current share price. We believe this valuation appropriately balances out the company's high risks with the company's high growth prospects and large upside opportunities.

Company Description

Based in Tampa, FL, Oragenics is focused on the Terra CoV-2 vaccine candidate for coronavirus pandemic and development of treatments for novel antibiotics against infectious diseases.

COMPANY UPDATE

Rating: **BUY**

Ticker: OGEN

Price: \$0.33

Target: \$2.00
(from \$2.25)

Stock Data

Exchange:	NYSE
52-week Range:	\$0.22 – 1.15
Shares Outstanding (million):	116
Market cap (\$million):	\$38
EV (\$million):	\$17
Debt (\$million):	\$0
Cash (\$million):	\$21
Avg. Daily Trading Vol. (\$million):	\$0.5
Float (million shares):	113
Short Interest (million shares):	2
Dividend, annual (yield):	\$0 (NA%)

Revenues (US\$ million)

	2022E (Cur.)	2022E (Old)	2023E (Cur.)	2023E (Old)
Q1 Mar	0A	0E	0E	
Q2 Jun	0E		0E	
Q3 Sep	0E		0E	
Q4 Dec	0E		0E	
Total	0E		0E	
EV/Revs	N/A		N/A	

Earnings per Share (pro forma)

	2022E (Cur.)	2022E (Old)	2023E (Cur.)	2023E (Old)
Q1 Mar	(0.05)A	(0.02)E	(0.05)E	(0.04)E
Q2 Jun	(0.04)E	(0.02)E	(0.05)E	(0.04)E
Q3 Sep	(0.05)E	(0.04)E	(0.05)E	(0.04)E
Q4 Dec	(0.05)E	(0.04)E	(0.05)E	(0.04)E
Total	(0.19)E	(0.13)E	(0.18)E	(0.17)E
P/E	N/A		N/A	

Important Disclosures

Ascendant Capital Markets LLC seeks to do business with companies covered by its research team. Consequently, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making an investment decision.

For analyst certification and other important disclosures, refer to the Disclosure Section, located at the end of this report, beginning on page 13.

Exhibit 1: Oragenics Inc. Investment Highlights (as of November 2021)

Oragenics is a development-stage company dedicated to fighting infectious diseases, including coronaviruses and multidrug-resistant organisms

Lead product is Terra CoV-2, a vaccine candidate to prevent COVID-19

- Gained access to multiple enabling technologies
- Focusing on intranasal vaccine due to medical need and potential for differentiation

Lantibiotics research program features a novel class of antibiotics to address infectious diseases that have developed resistance to commercial antibiotics

Oragenics Summary

- **Lead Asset: NT-CoV2-1**
 - Licensed from NIH – two-proline substitution of SARS-CoV-2 spike protein
- **NT-CoV2-1 Intranasal Vaccine Differentiation and Advantages**
 - Patient-friendly, needle-free administration
 - May reduce virus transmission at source of infection (mucosal nasopharyngeal surfaces)
 - Protein subunit-based intranasal vaccine approach versus live viral intranasal vaccine
 - Small intranasal competitive landscape, others need to prove new vector safety
 - NRC Platform allows rapid production of cell lines in 6-8 weeks
- **Animal Studies Demonstrated High Immunogenicity & Strong Neutralizing Activity**
 - Intranasal formulation led to high IgG and IgA anti-spike protein titers in blood and lungs of mice
 - Undetectable viral loads in hamster nasal turbinates and lungs; significant reduction of weight loss
 - Prevented the cellular binding of the viral Spike protein based on the ancestral reference strain
- **Ongoing IND-enabling GLP-Tox Study in Rabbits, Phase 1 expected this year**

Investment Highlights

1

2

3

Terra CoV-2 Combines Multiple Technologies:

- De-risked antigen to SARS-CoV-2 spike protein vaccine technology from NIH
- Cell line that can rapidly respond to new variants from NRC Canada
- Intranasal adjuvant from Inspirevax

Potential for Highly Differentiated COVID-19 Vaccine:

- Intranasal vaccine could reduce transmission and is needle-free
- Limited number of competing intranasal vaccines (5 Phase 1/2 viral vaccines)
- Expect to file US IND in April 2022

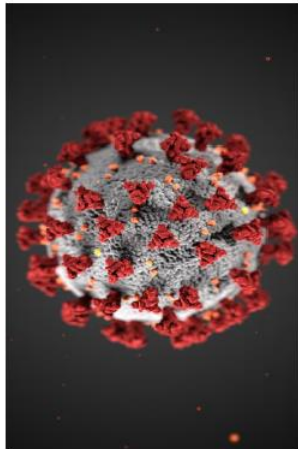


Lantibiotics platform features a novel class of peptide antibacterial compounds, with activity against a variety of multidrug-resistant infections

Source: Company reports

Exhibit 2: Orogenics Terra-CoV-2 Vaccine

Terra-CoV-2 Vaccine Development Overview



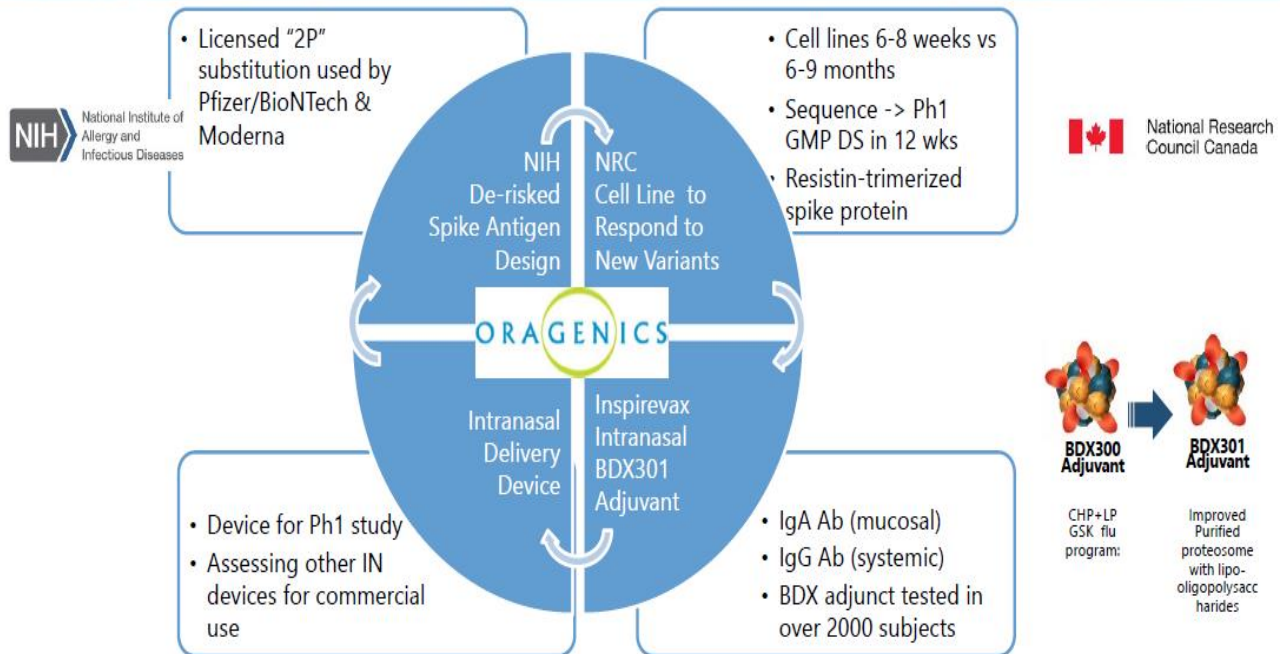
Objective: To develop and commercialize a vaccine providing long lasting immunity from SARS-CoV-2 infection focusing on the spike protein.

Potential Benefits:

- Long lasting protection from SARS-CoV-2 virus
- COVID-19 infection prevention
- reduced viral spread
- more rapid immune response
- lower antigen concentration required
- Intranasal and intramuscular administration options

Future Research: Potential cross protection against other coronaviruses and Covid-19 variants.

NT-CoV2-1 Combines Four Technologies



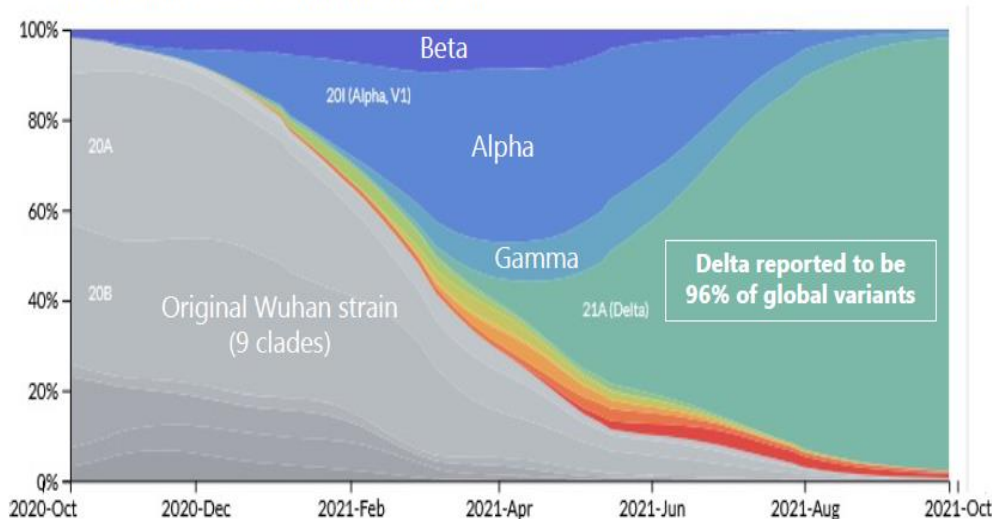
Source: Company reports.

Exhibit 3: COVID-19 Vaccine Commercial Analysis

COVID-19 Vaccine Commercial Analysis

Rapid global evolution of variants

Global SARS-CoV-2 Strain Distribution



- Delta variant has replaced nearly all other variants globally
- Vaccines based on the original Wuhan strain have shown good protection against Delta
- Unknown whether new strains will emerge and displace Delta – will new vaccines be required?

COVID-19 Vaccine Commercial Analysis

Intranasal vaccine pipeline is limited

Intranasal Vaccine Candidates vs. Oragenics’ NT-CoV2-1

Organization	Organization Type	Vaccine Type	Stage	Comments
Precision Viralogics/ Bharat Biotech	US biotech/Indian manufacturer	Live chimpanzee adenovirus vector	Phase 2	Indian-made vaccines unlikely to be approved in US/EU
Codagenix/Serum Institute of India	US biotech/Indian manufacturer	Live attenuated SARS-CoV-2 virus	Phase 1	Hard to establish safety of live, attenuated SARS-CoV-2 vaccine
Oxford University/ Astra Zeneca	UK university/ Big Pharma	Live chimpanzee adenovirus vector	Phase 1	Known AEs (blood clots) may hinder approval & acceptance in US/EU
Meissa Vaccines	US private biotech	Live respiratory syncytial virus vector	Phase 1	Need to establish safety of new viral vector
CyanVac	US private biotech	Live parainfluenza-5 virus vector	Phase 1	Need to establish safety of new viral vector
Mt. Sinai, NY	US academic medical center	Live Newcastle disease viral vector	Phase 1	Need to establish safety of new viral vector
Oragenics	US public biotech	Protein subunit + BDX-301 adjuvant	Late preclinical	<u>Non-viral</u> intranasal vaccine candidate
Intravacc	Netherlands private CDMO	Protein subunit + OMV adjuvant	Late preclinical	<u>Non-viral</u> intranasal vaccine candidate

Source: Company reports.

Exhibit 4: Terra-CoV-2 Vaccine Key Benefits

Potential Key Vaccine Attributes

- Currently designed for availability and use for post-pandemic distribution
- Access to **novel rationally designed adjuvant for intramuscular administration**
- **Potential Intranasal Delivery using separate adjuvant technology** – potential intranasal delivery, with meaningful differentiation for children and needle-phobic populations
- Potential for **single dose** efficacy (based on Phase 1 results)
- **Likely low COGs** based on using Chinese Hamster Ovary Cell Line approach
- Potential storage and transport at **refrigerated (5°C) temperatures**, not -50° to -80°C
- Potential advantage for remote locations, particularly in developing world

Intranasal COVID-19 Vaccines

Potential benefits of intranasal COVID vaccines

- **Intranasal vaccines may address limitations of current vaccines**
 - Waning efficacy requiring third (and fourth) doses for new VOCs
 - Transmission remains a concern due to high nasopharyngeal viral loads
 - Recent study in healthcare workers in Israel during Omicron VOC shows limitations of mRNA vaccines¹
 - 4th dose efficacy against any infection was 30% Pfizer/BioNTech vaccine (95% CI -9% to 55%) and 11% for the Moderna vaccine (95% CI -43% to 44%)
 - Authors conclusion: “next generation vaccines may be needed to provide better protection against infection with highly transmissible future variants”²
 - Intranasal vaccines could reduce nasopharyngeal viral loads vs. IM vaccines
- **Intranasal vaccines offer needle-free option**
 - 1 in 4 adults and 2 out of 3 children have strong needle fears³
 - 10% of people may delay COVID-19 vaccine due to fear of needles³

Source: Company reports

Exhibit 5: Terra-CoV-2 Vaccine Development Milestones (as of November 2021)

Vaccine Program CMC Updates

Activity	Status
National Research Council of Canada (Licensor of Cell Line & Platform)	
• Important partner to Orogenics/Biodextris	Supporting R&D activities to de-risk development and critical path activities
• Areas of program support	Process -> Methods -> Characterization -> Cell Line Development -> R&D
• Clonal cell line development program	In-progress for Wuhan (WU) antigen; planned for Delta antigen
• Hamster Challenge Study	In-life completed; data anticipated Nov. 30 th
• Journal publication opportunity;	Orogenics-NRC-Inspirevax collaboration (NRC lead)
• GLP-Tox Enabling Pilot Rabbit Study	In-life on-going; data anticipated Dec. 30 th
Biodextris (Antigen Manufacturer)	
• 3 Stable Cell GMP Banks produced (WU+Beta+Delta)	In-Progress; Being Released
• Process & Methods tech transfer from NRC/Orogenics to Biodextris	Complete (process), In-Process (Methods)
• Materials Procurement	De-risked & largely complete
• Current focus of CMC activities; timing of IND submission	WU+IN administration); est. April 2022 (Delta available if needed)
Inspirevax (Adjuvant Technology)	
• GMP BDX301 availability	Available
• Nasal delivery device selection	In-Progress
• Final clinical kit fill/finish	Planning Stage

Source: Company reports.

Exhibit 6: COVID-19 Vaccine Opportunities

- **Market evolving rapidly across several dimensions**
 - Virus evolution with emergence & disappearance of variants
 - Target populations are increasingly “seropositive” (from vaccination or exposure)
 - Rapidly shifting competitive landscape
- **Terra CoV-2 commercial opportunity**
 - Assessed distinct formulations for intramuscular or intranasal administration
 - Intramuscular approach with Adjuvance TQL1055 adjuvant
 - Intranasal approach with Inspirevax BDX301 adjuvant

Terra CoV-2 commercial opportunity

- **Focus on intranasal Terra CoV-2 candidate**
 - Less competition and more opportunities to differentiate
- **Establish first as preferred booster dose**
 - Reduce virus transmission at source of infection (mucosal surfaces)
 - Needle-free
 - Advantages of protein subunit intranasal vaccine versus live viral vaccines
- **Develop for routine childhood immunization**
 - Longer-term objective
 - Needle-free option appreciated by kids and parents
 - Easier to fit needle-free into crowded immunization schedule

COVID-19 Vaccine Commercial Analysis Competitive landscape

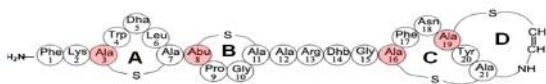
- **Most competitive vaccine market ever**
 - 129 Marketed/clinical-stage vaccines
 - 45 Clinical-stage protein subunit vaccine candidates (same type as Terra CoV-2)
 - 9 Clinical-stage intranasal vaccines
 - 194 Preclinical-stage vaccine candidates
- **Late market entrants need to differentiate their vaccine**
 - Improve reduction in transmission of virus
 - Provide needle-free administration options
 - Fit with future target markets
 - “Best booster” for seropositives
 - Routine childhood immunization schedule
 - Protect against dominant variant

Source: Company reports.

Exhibit 7: Orogenics Lantibiotics (as of March 2021)

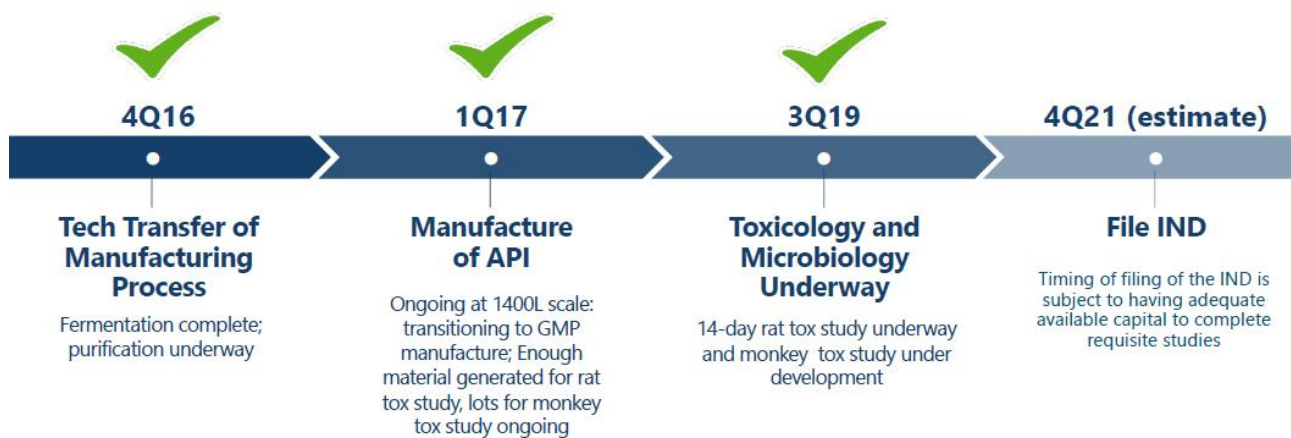
Lantibiotics: Novel Platform of Antibiotics to Treat Serious Life-Threatening Infections

- Lantibiotics are a novel class of peptide antibacterial compounds naturally produced by a variety of Gram-positive bacterial strains to attack competing bacterial strains
- Platform: >700 lantibiotic structures created, potentially generating a pipeline of new compounds
- Platform provides potential for development in multidrug resistant infections:
 - Methicillin Resistant *Staphylococcus aureus* (MRSA)
 - Vancomycin Resistant Enterococci (VRE)
 - Virulent *Clostridium difficile*
 - Gram(-) infections



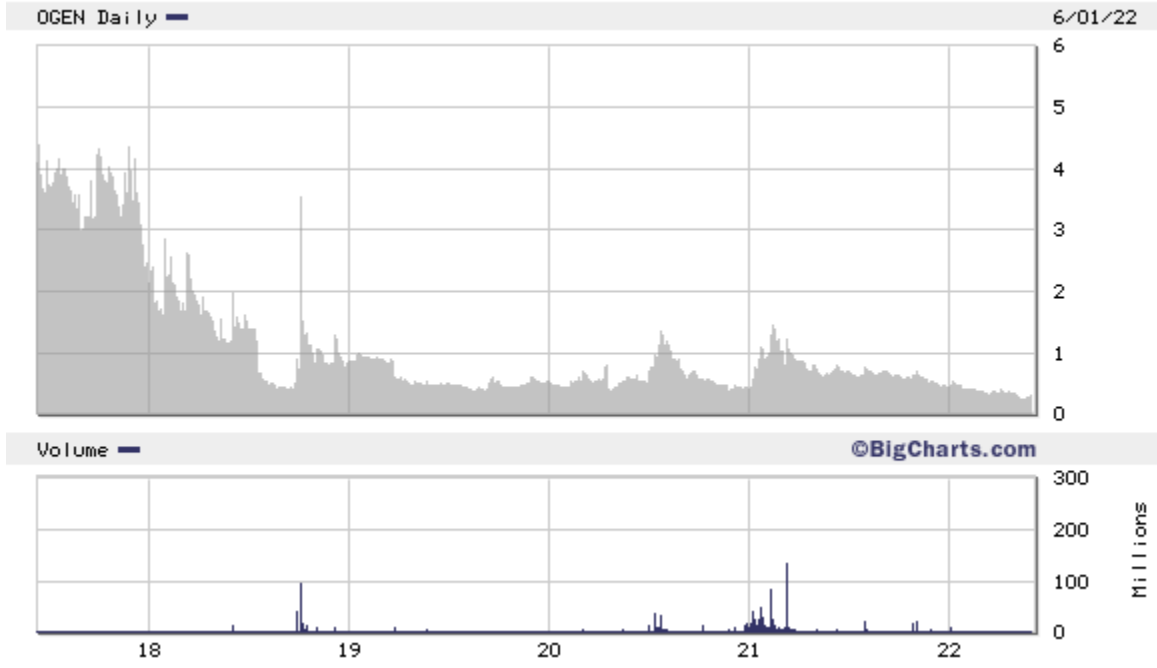
Mutacin 1140: a lantibiotic produced by *Streptococcus mutans*

Lantibiotics: OG716 *C. difficile* Program Milestones



Source: Company reports.

Exhibit 8: Orogenics, Inc. Stock Price (5-years)



Source: <https://bigcharts.marketwatch.com/>

FINANCIAL MODEL

Orogenics, Inc.

Income Statement (\$ mils)	Mar-20	Jun-20	Sep-20	Dec-20	2020	Mar-21	Jun-21	Sep-21	Dec-21	2021	Mar-22	Jun-22	Sep-22	Dec-22	2022	Mar-23	Jun-23	Sep-23	Dec-23	2023
Fiscal Year End: December 31	Q1A	Q2A	Q3A	Q4A	FY-A	Q1A	Q2A	Q3A	Q4A	FY-A	Q1A	Q2E	Q3E	Q4E	FY-E	Q1E	Q2E	Q3E	Q4E	FY-E
Total Revenue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<u>Cost of Revenues</u>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross Profit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Research and development	3.7	11.5	3.5	3.4	22.1	3.3	2.5	3.5	1.3	10.6	4.7	3.8	3.8	3.8	16.0	3.8	3.8	3.8	3.8	15.0
General and administrative	1.5	0.8	1.0	1.2	4.5	2.0	1.4	0.8	1.1	5.3	1.3	1.3	1.6	1.6	5.8	1.6	1.6	1.6	1.6	6.4
<u>Restructuring and other</u>					0.0					0.0					0.0					0.0
Total operating expenses	5.2	12.4	4.5	4.5	26.6	5.2	3.8	4.4	2.4	15.9	6.1	5.1	5.4	5.4	21.8	5.4	5.4	5.4	5.4	21.4
Operating income (loss)	(5.2)	(12.4)	(4.5)	(4.5)	(26.6)	(5.2)	(3.8)	(4.4)	(2.3)	(15.8)	(6.1)	(5.1)	(5.4)	(5.4)	(21.8)	(5.4)	(5.4)	(5.4)	(5.4)	(21.4)
Interest income (expense)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	(0.0)	(0.0)	(0.0)	0.0	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
<u>Other income (expense)</u>	0.0	(0.0)	(0.0)	0.1	0.1	0.0	(0.0)	0.0	(0.0)	(0.0)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Income before income taxes	(5.2)	(12.3)	(4.5)	(4.4)	(26.4)	(5.2)	(3.8)	(4.4)	(2.3)	(15.7)	(6.0)	(5.1)	(5.4)	(5.4)	(21.8)	(5.4)	(5.4)	(5.4)	(5.4)	(21.4)
<u>Income taxes</u>					0.0					0.0					0.0					0.0
Net income (loss)	(5.2)	(12.3)	(4.5)	(4.4)	(26.4)	(5.2)	(3.8)	(4.4)	(2.3)	(15.7)	(6.0)	(5.1)	(5.4)	(5.4)	(21.8)	(5.4)	(5.4)	(5.4)	(5.4)	(21.4)
<u>Nonrecurring/noncash adjustments</u>					0.0					0.0					0.0					0.0
Net income (pro forma)	(5.2)	(12.3)	(4.5)	(4.4)	(26.4)	(5.2)	(3.8)	(4.4)	(2.3)	(15.7)	(6.0)	(5.1)	(5.4)	(5.4)	(21.8)	(5.4)	(5.4)	(5.4)	(5.4)	(21.4)
EBITDA																				
Shares, Basic	46.1	52.2	59.7	69.0	56.5	103.0	115.9	116.3	116.4	112.9	116.4	116.5	116.6	116.7	116.5	116.7	116.8	116.9	117.0	116.8
Shares, Diluted	46.1	52.2	59.7	69.0	56.5	103.0	115.9	116.3	116.4	112.9	116.4	116.5	116.6	116.7	116.5	116.7	116.8	116.9	117.0	116.8
EPS Basic (pro forma)	(\$0.11)	(\$0.24)	(\$0.08)	(\$0.06)	(\$0.47)	(\$0.05)	(\$0.03)	(\$0.04)	(\$0.02)	(\$0.14)	(\$0.05)	(\$0.04)	(\$0.05)	(\$0.05)	(\$0.19)	(\$0.05)	(\$0.05)	(\$0.05)	(\$0.05)	(\$0.18)
EPS Diluted (pro forma)	(\$0.11)	(\$0.24)	(\$0.08)	(\$0.06)	(\$0.47)	(\$0.05)	(\$0.03)	(\$0.04)	(\$0.02)	(\$0.14)	(\$0.05)	(\$0.04)	(\$0.05)	(\$0.05)	(\$0.19)	(\$0.05)	(\$0.05)	(\$0.05)	(\$0.05)	(\$0.18)
Margins																				
Gross margin																				
Research and development																				
General and administrative																				
Operating margin	NM	NM	NM	NM	NM	NM	NM	NM	-2645%	-18130%	-40141%	NM	NM	NM	-144564%	NM	NM	NM	NM	NM
Tax rate, GAAP	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Net margin	NM	NM	NM	NM	NM	NM	NM	NM	-2636%	-18062%	-40015%	NM	NM	NM	-144485%	NM	NM	NM	NM	NM
Y/Y % change																				
Total Revenue																				
Gross margin																				
Research and development	54%	198%	14%	21%	82%	-12%	-79%	1%	-61%	-52%	45%	52%	6%	186%	51%	-21%	0%	0%	0%	-6%
General and administrative	55%	-21%	18%	33%	21%	30%	70%	-16%	-10%	16%	-33%	-5%	89%	48%	11%	20%	23%	0%	0%	10%
Operating income (loss)	54%	152%	15%	24%	68%	0%	-69%	-3%	-49%	-41%	16%	32%	22%	132%	38%	-12%	6%	0%	0%	-2%
Net income (loss)	56%	157%	17%	23%	70%	1%	-69%	-3%	-48%	-41%	16%	32%	22%	133%	39%	-11%	6%	0%	0%	-2%
EPS Diluted (pro forma)	3%	127%	-9%	-18%	27%	-55%	-86%	-50%	-69%	-70%	2%	32%	22%	133%	34%	-12%	6%	0%	0%	-2%

Source: Company reports and Ascendant Capital Markets estimates.

Orogenics, Inc.

Balance Sheet (\$ mils)	Mar-20	Jun-20	Sep-20	Dec-20	Mar-21	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22	Sep-22	Dec-22	Mar-23	Jun-23	Sep-23	Dec-23
Fiscal Year End: December 31	Q1A	Q2A	Q3A	Q4A	Q1A	Q2A	Q3A	Q4A	Q1A	Q2E	Q3E	Q4E	Q1E	Q2E	Q3E	Q4E
Assets																
Cash and cash equivalents	14.4	9.6	10.0	17.6	36.5	34.6	29.9	27.3	21.4	16.4	11.1	5.8	0.5	(4.9)	(10.3)	(15.6)
Short term investments										0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deferred income taxes										0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prepaid expenses and other	0.3	0.3	0.5	0.3	0.2	0.1	0.6	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total current assets	14.7	9.9	10.5	18.0	36.7	34.7	30.5	27.7	21.6	16.7	11.4	6.1	0.8	(4.6)	(10.0)	(15.3)
Property and equipment, net	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.5	0.6
Intangibles, net										0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deferred income tax										0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.8	0.7	0.7	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Total assets	15.6	10.7	11.3	18.7	37.4	35.2	31.1	28.2	22.2	17.2	12.0	6.7	1.5	(3.8)	(9.1)	(14.3)
Liabilities and stockholders' equity																
Accounts payable	1.8	1.1	0.5	0.9	0.6	1.9	1.5	0.9	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Accrued expenses										0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deferred income tax										0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Short term debt	0.1	0.1	0.5	0.2	0.1	0.1	0.5	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total current liabilities	2.0	1.4	1.1	1.3	0.9	2.1	2.2	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Deferred income taxes										0.0	0.0	0.0	0.0	0.0	0.0	0.0
Warrant liabilities										0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other long term liabilities	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Long term debt										0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total other liabilities	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Preferred stock	7.2	7.2	7.2	7.2	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Common stock	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.7
Additional paid-in capital	138.9	147.1	152.4	164.0	194.1	194.6	194.8	195.0	195.1	195.1	195.1	195.1	195.1	195.1	195.1	195.1
Retained earnings	(133.2)	(145.5)	(150.0)	(154.4)	(160.8)	(164.6)	(169.0)	(171.3)	(177.3)	(182.4)	(187.7)	(193.1)	(198.4)	(203.8)	(209.1)	(214.5)
Accumulated other comprehensive income										0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minority Interest										0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total stockholders' equity	12.9	8.8	9.6	16.8	36.1	32.7	28.5	26.5	20.5	15.6	10.3	5.1	(0.2)	(5.5)	(10.7)	(16.0)
Total stockholders' equity and liabil	15.6	10.7	11.3	18.7	37.4	35.2	31.1	28.2	22.2	17.2	12.0	6.7	1.5	(3.8)	(9.1)	(14.3)

Balance Sheet Drivers

	Mar-20	Jun-20	Sep-20	Dec-20	Mar-21	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22	Sep-22	Dec-22	Mar-23	Jun-23	Sep-23	Dec-23
Book & Cash Value (per share)	Q1A	Q2A	Q3A	Q4A	Q1A	Q2A	Q3A	Q4A	Q1A	Q2E	Q3E	Q4E	Q1E	Q2E	Q3E	Q4E
Book Value per Share (diluted)	0.28	0.17	0.16	0.24	0.35	0.28	0.25	0.23	0.18	0.13	0.09	0.04	(0.00)	(0.05)	(0.09)	(0.14)
Cash per Share (diluted)	0.31	0.18	0.17	0.26	0.35	0.30	0.26	0.23	0.18	0.14	0.10	0.05	0.00	(0.04)	(0.09)	(0.13)
Net cash per Share (diluted)	0.31	0.18	0.16	0.25	0.35	0.30	0.25	0.23	0.18	0.14	0.09	0.05	0.00	(0.04)	(0.09)	(0.13)

Source: Company reports and Ascendant Capital Markets estimates

Orogenics, Inc.

Cash Flow Statement (\$ mils)	Mar-20	Jun-20	Sep-20	Dec-20	2020	Mar-21	Jun-21	Sep-21	Dec-21	2021	Mar-22	Jun-22	Sep-22	Dec-22	2022	Mar-23	Jun-23	Sep-23	Dec-23	2023
Fiscal Year End: December 31	Q1A	Q2A	Q3A	Q4A	FY-A	Q1A	Q2A	Q3A	Q4A	FY-A	Q1A	Q2E	Q3E	Q4E	FY-E	Q1E	Q2E	Q3E	Q4E	FY-E
Cash flow from operating activities																				
Net income	(5.2)	(12.3)	(4.5)	(4.4)	(26.4)	(5.2)	(3.8)	(4.4)	(2.3)	(15.7)	(6.0)	(5.1)	(5.4)	(5.4)	(21.8)	(5.4)	(5.4)	(5.4)	(5.4)	(21.4)
Depreciation	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amortization					0.0					0.0					0.0					0.0
Debt related amortization expense				(0.1)	(0.1)					0.0					0.0					0.0
Stock comp	0.9	0.2	0.2	0.3	1.5	1.1	0.2	0.1	0.2	1.7	0.1	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.1	0.4
Deferred income taxes					0.0					0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Change in fair value of warrant liability					0.0					0.0					0.0					0.0
Writedowns and impairments					0.0					0.0					0.0					0.0
Other gains/losses					8.0					0.0	(0.0)				(0.0)					0.0
Other		8.0		0.0	8.0					0.0					0.0					0.0
Changes in operating assets and liabilities:																				
Prepaid expenses & other curre	0.2	0.0	0.2	0.1	0.6	0.1	0.1	(0.5)	0.7	0.5	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Other assets					0.0					0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accounts payable	0.2	(0.7)	(0.6)	0.5	(0.6)	(0.4)	1.4	(0.4)	(0.6)	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Accrued expenses					0.0					0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other liabilities					0.0					0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net cash (used in) provided by	(3.8)	(4.8)	(4.7)	(3.6)	(17.0)	(4.3)	(2.1)	(5.2)	(1.9)	(13.5)	(5.6)	(5.0)	(5.3)	(5.3)	(21.1)	(5.3)	(5.3)	(5.3)	(5.3)	(21.0)
Cash flow from investing activities																				
Purchases of property and equipment					0.0			(0.0)	(0.0)	(0.0)	(0.1)	(0.0)	(0.0)	(0.1)	(0.2)	(0.0)	(0.1)	(0.2)	(0.0)	(0.4)
Purchases of short-term investments					0.0					0.0					0.0					0.0
Acquisitions					0.0					0.0					0.0					0.0
Other					0.0					0.0					0.0					0.0
Net cash used in investing activ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(0.0)	(0.0)	(0.0)	(0.1)	(0.0)	(0.0)	(0.1)	(0.2)	(0.0)	(0.1)	(0.2)	(0.0)	(0.4)
Cash flow from financing activities																				
Issuance of debt		0.1			0.1			0.6	(0.6)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repayment of debt	(0.1)	(0.1)	(0.1)	(0.1)	(0.3)	(5.7)	(0.1)	(0.1)	(0.2)	(6.2)	(0.2)				(0.2)					0.0
Issuance of stock			5.2	11.3	16.5	26.7				26.7		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proceeds from stock option exercises		0.0	(0.0)	0.0	0.0	2.3	0.3	0.1	0.0	2.6					0.0					0.0
Other					0.0					0.0					0.0					0.0
Dividends and distributions					0.0					0.0					0.0					0.0
Cash provided by (used in) fina	(0.1)	0.1	5.1	11.2	16.3	23.2	0.2	0.6	(0.8)	23.1	(0.2)	0.0	0.0	0.0	(0.2)	0.0	0.0	0.0	0.0	0.0
Effect of exchange rate on cash					0.0					0.0					0.0					0.0
Net increase (decrease) in cash	(3.9)	(4.7)	0.4	7.6	(0.6)	18.9	(1.9)	(4.6)	(2.7)	9.6	(5.9)	(5.0)	(5.3)	(5.3)	(21.5)	(5.3)	(5.3)	(5.5)	(5.3)	(21.4)
Beginning cash and equivalents	18.3	14.4	9.6	10.0	18.3	17.6	36.5	34.6	29.9	17.6	27.3	21.4	16.4	11.1	27.3	5.8	0.5	(4.9)	(10.3)	5.8
Ending cash and equivalents	14.4	9.6	10.0	17.6	17.6	36.5	34.6	29.9	27.3	27.3	21.4	16.4	11.1	5.8	5.8	0.5	(4.9)	(10.3)	(15.6)	(15.6)

Source: Company reports and Ascendant Capital Markets estimates

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Oragenics, Inc.



Source: <https://bigcharts.marketwatch.com/>

Report	Report Date	Rating	Price
	Date		Target
1	3/11/2019	Buy	2.50
2	5/2/2019	Buy	2.50
3	9/5/2019	Buy	2.50
4	2/5/2020	Buy	2.50
5	3/24/2021	Buy	2.75
6	5/16/2021	Buy	2.00
7	8/25/2021	Buy	2.25
8	11/20/2021	Buy	2.50
9	3/27/2022	Buy	2.25

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Total return is defined as price appreciation plus dividend yield.

Ascendant Capital Markets, LLC Rating System

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Sell: We expect the stock to provide a total return of minus 10% or worse within a 12-month period.

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Total return is defined as price appreciation plus dividend yield.

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Rating	Count	Percent	Investment Banking Services Past 12 months	
			Count	Percent
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Hold	0	0%	0	0%
Sell	1	2%	0	0%
Total	42	100%	13	31%

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