

Oragenics, Inc.

Reports Q3. Expect Q1 2023 IND filing for its COVID-19 vaccine. Key upcoming development milestones should drive stock. Lowering P/T to \$1.50.

Reports Q3: Oragenics recently (on November 14) reported its Q3 2022 (ending September) results. Net loss was \$3.9 million or EPS of \$(0.03) compared with our estimates of \$(0.05). 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 \$4.0 million, down slightly from Q2 2022's \$4.1 million.

No guidance: Management did not provide forward guidance.

Estimate change: We are slightly adjusting our 2022 EPS estimate to \$(0.16) from \$(0.18).

Focused NT-CoV2-1 vaccine candidate: The company is focused on its NT-CoV2-1 (f.k.a. Terra CoV-2) vaccine candidate to combat the COVID virus. 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 ~98 million in the U.S. and has been attributed to 1.1 million deaths in the 2.5 years since it was discovered in the U.S. Although there are 4 vaccines currently approved for use in the U.S. (Pfizer, Moderna, J&J, Novavax), we believe there are a large market opportunity for more as the coronavirus may be a persistent ongoing virus.

NT-CoV2-1 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 NT-CoV2-1 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 Q1 2023: We expect the company to file an IND (Investigational New Drug) application with the FDA for its NT-CoV2-1 vaccine candidate in Q1 2023. The company expects to file an IND application following the availability of the final GLP toxicology report (which it has already concluded and top-line data is expected in Q4) for inclusion in the IND.

New CEO: In June, the company appointed Kimberly Murphy, a Board member, as CEO. Ms. Murphy brings more than 25 years of vaccine industry experience at leading pharmaceutical companies.

Balance sheet: As of Q3, the company has \$14 million in cash. We believe that (and the company has guided to) the company has enough cash through Q1 2023 so it will have to raise new capital soon.

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 \$1.50 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 development of its NT-CoV2-1 vaccine candidate for COVID and novel antibiotics against infectious diseases.

COMPANY UPDATE

Rating: **BUY**

Ticker: OGEN

Price: \$0.20
(intraday)

Target: \$1.50
(from \$2.25)

Stock Data

Exchange:	NYSE
52-week Range:	\$0.19 – 0.63
Shares Outstanding (million):	118
Market cap (\$million):	\$24
EV (\$million):	\$10
Debt (\$million):	\$0
Cash (\$million):	\$14
Avg. Daily Trading Vol. (\$million):	\$0.3
Float (million shares):	114
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	
Q2 Jun	0A		0E	
Q3 Sep	0A	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		(0.05)E	
Q2 Jun	(0.03)A		(0.05)E	
Q3 Sep	(0.03)A	(0.05)E	(0.05)E	
Q4 Dec	(0.04)E	(0.05)E	(0.05)E	
Total	(0.16)E	(0.18)E	(0.18)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

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

Intranasal COVID-19 Vaccine Overview

- **Lead Asset: NT-CoV2-1**
 - Licensed from NIH – two-proline substitution of SARS-CoV-2 spike protein
 - Currently in pivotal toxicology study and expected to enter clinical studies in 1Q22
- **NT-CoV2-1 Non-Viral 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
 - 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 in weight loss
 - Prevented cellular binding of viral Spike protein based on ancestral reference strain and certain variants of concern
- **National Research Council of Canada Collaboration**

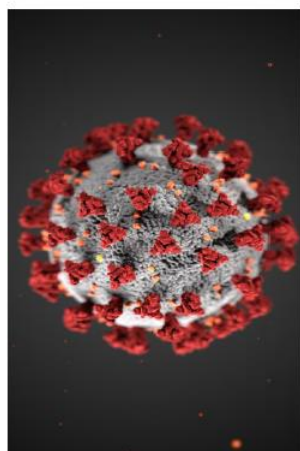
Key Investment Highlights



Source: Company reports

Exhibit 2: Orogenics NT-CoV2-1 (f.k.a. Terra-CoV-2) Vaccine

Terra-CoV-2 Vaccine Development Overview



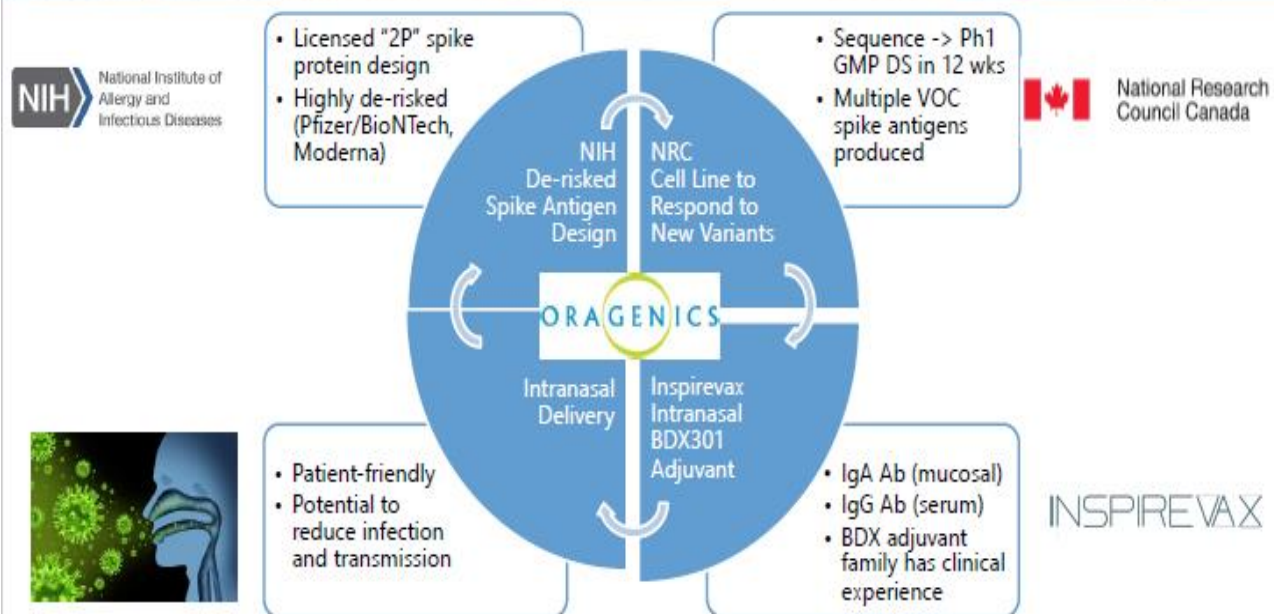
Objective: To develop and commercialize a vaccine providing long lasting immunity from SARS-CoV-2 infection focusing on the spike protein.

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



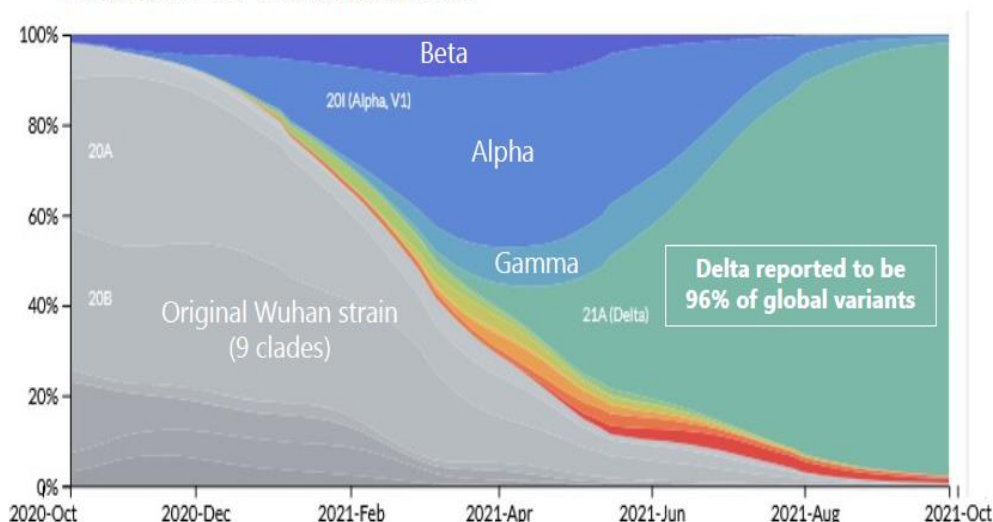
Source: Company reports.

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 Competition

Competitive landscape for intranasal COVID vaccines

Organization	Organization Type	Vaccine Type	Stage	Comments
Astra Zeneca	Global pharma	Live chimpanzee adenovirus vector	Phase 1	Known AEs (blood clots) may hinder approval & acceptance in US/EU
Codagenix	US private biotech	Live attenuated SARS-CoV-2 virus	Phase 1	Hard to establish safety of live, attenuated SARS-CoV-2 vaccine
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
CastleVax	US private biotech	Live Newcastle disease viral vector	Phase 1	Need to establish safety of new viral vector
ACM Biolabs	Singapore & Swiss private biotech	Protein subunit + polymer vesicles	Phase 1	<u>Non-viral</u> vaccine candidate
Orogenics	US public biotech	Protein subunit + BDx-301 adjuvant	Late preclinical	<u>Non-viral</u> vaccine candidate
Xanadu Bio	US public biotech	Protein subunit + polymer vesicles	Late preclinical	<u>Non-viral</u> vaccine candidate
Intravacc	Netherlands private CDMO	Protein subunit + OMV adjuvant	Late preclinical	<u>Non-viral</u> vaccine candidate

Source: Company reports.

Exhibit 4: NT-CoV2-1 (f.k.a. Terra-CoV-2) Vaccine 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

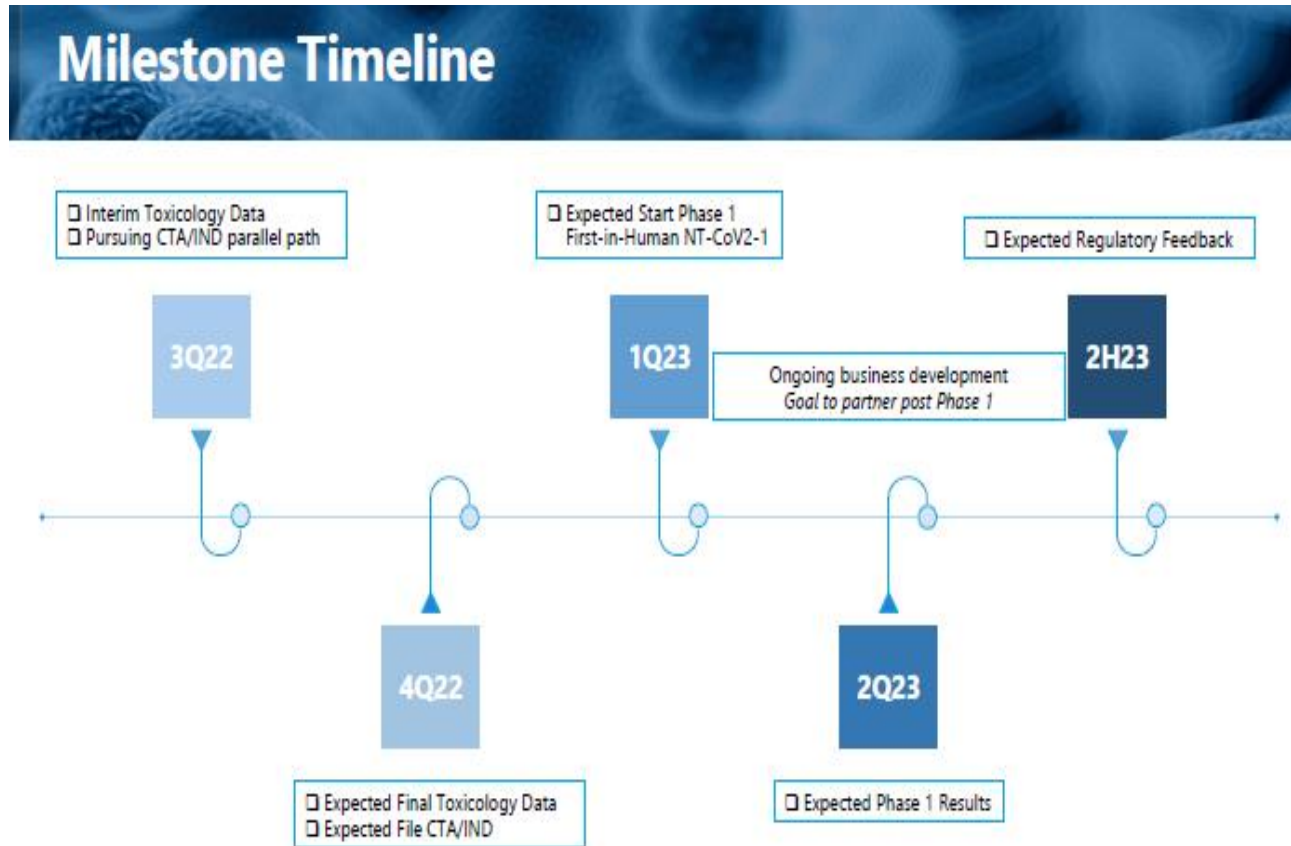
Intranasal COVID-19 Vaccines

Potential benefits of intranasal COVID vaccines

- **Intranasal vaccines may address limitations of current vaccines**
 - Waning efficacy requiring third (and fourth) doses for new variants of concern (VOC)
 - 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: NT-CoV2-1 (f.k.a. Terra-CoV-2) Vaccine Development Milestones



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

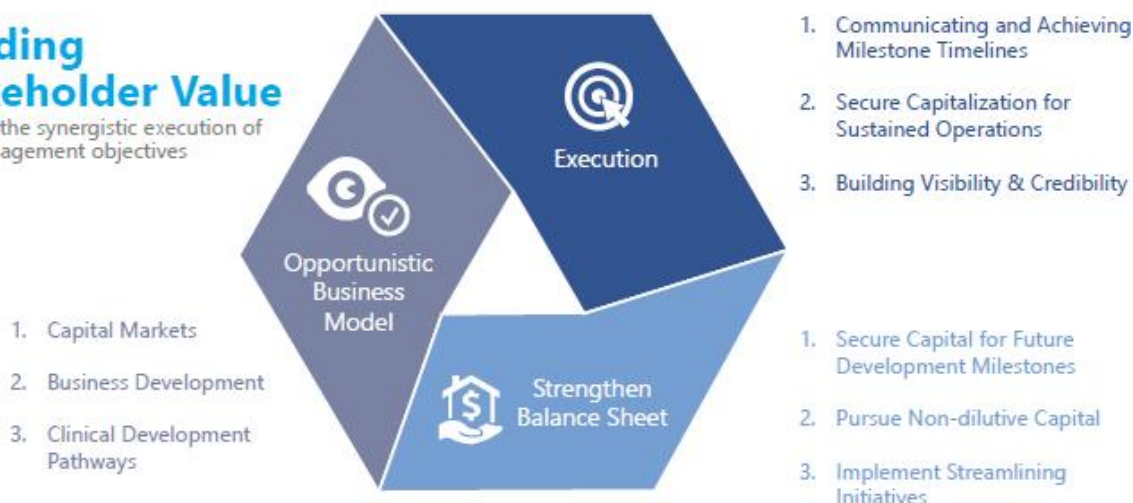
Source: Company reports.

Exhibit 7: New Management Goals

New Management Objectives

Building Stakeholder Value

Through the synergistic execution of new management objectives



Source: Company reports.

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



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

FINANCIAL MODEL

Oragenics, 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	Q2A	Q3A	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	0.1	0.0	0.1	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	0.1	0.0	0.1	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	3.0	2.8	3.0	13.6	3.8	3.8	3.8	3.8	15.1
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	1.0	1.2	1.2	4.8	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	4.1	4.0	4.2	18.4	5.4	5.4	5.4	5.4	21.5
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)	(4.0)	(4.0)	(4.2)	(18.3)	(5.4)	(5.4)	(5.4)	(5.4)	(21.5)
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)	0.1	(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)	(4.0)	(3.9)	(4.2)	(18.2)	(5.4)	(5.4)	(5.4)	(5.4)	(21.5)
<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)	(4.0)	(3.9)	(4.2)	(18.2)	(5.4)	(5.4)	(5.4)	(5.4)	(21.5)
<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)	(4.0)	(3.9)	(4.2)	(18.2)	(5.4)	(5.4)	(5.4)	(5.4)	(21.5)
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	116.4	116.7	117.5	116.8	117.5	117.6	117.7	117.8	117.7
Shares, Diluted	46.1	52.2	59.7	69.0	56.5	103.0	115.9	116.3	116.4	112.9	116.4	116.4	116.7	117.5	116.8	117.5	117.6	117.7	117.8	117.7
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)	(\$0.03)	(\$0.03)	(\$0.04)	(\$0.16)	(\$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)	(\$0.03)	(\$0.03)	(\$0.04)	(\$0.16)	(\$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%	-13317%	-4595%	NM	-13880%	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%	-13269%	-4553%	NM	-13834%	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%	23%	-20%	129%	28%	-20%	24%	33%	25%	11%
General and administrative	55%	-21%	18%	33%	21%	30%	70%	-16%	-10%	16%	-33%	-24%	43%	11%	-9%	20%	53%	32%	33%	34%
Operating income (loss)	54%	152%	15%	24%	68%	0%	-69%	-3%	-49%	-41%	16%	5%	-10%	83%	16%	-11%	32%	35%	27%	18%
Net income (loss)	56%	157%	17%	23%	70%	1%	-69%	-3%	-48%	-41%	16%	6%	-11%	84%	16%	-10%	33%	37%	27%	18%
EPS Diluted (pro forma)	3%	127%	-9%	-18%	27%	-55%	-86%	-50%	-69%	-70%	2%	5%	-11%	82%	12%	-11%	32%	36%	27%	17%

Source: Company reports and Ascendant Capital Markets estimates.

Oragenics, 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	Q2A	Q3A	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	17.9	14.0	10.1	5.2	0.2	(4.8)	(9.7)
Short term investments												0.0	0.0	0.0	0.0	0.0
Deferred income taxes												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	0.1	0.6	0.6	0.6	0.6	0.6	0.6
Total current assets	14.7	9.9	10.5	18.0	36.7	34.7	30.5	27.7	21.6	18.0	14.5	10.7	5.7	0.8	(4.3)	(9.2)
Property and equipment, net	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.5	0.5
Intangibles, net												0.0	0.0	0.0	0.0	0.0
Deferred income tax												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	18.5	15.0	11.3	6.4	1.5	(3.4)	(8.3)
Liabilities and stockholders' equity																
Accounts payable	1.8	1.1	0.5	0.9	0.6	1.9	1.5	0.9	1.1	1.3	0.9	0.9	0.9	0.9	0.9	0.9
Accrued expenses												0.0	0.0	0.0	0.0	0.0
Deferred income tax												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		0.5	0.3	0.1		0.4	0.4	0.4	0.4	0.4	0.4
Total current liabilities	2.0	1.4	1.1	1.3	0.9	2.1	2.2	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Deferred income taxes												0.0	0.0	0.0	0.0	0.0
Warrant liabilities												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	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Long term debt												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	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Preferred stock	7.2	7.2	7.2	7.2	2.7	2.7	2.7	2.7	2.7	2.7	1.6	1.6	1.6	1.6	1.6	1.6
Common stock	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.6	1.1	1.5	2.0	2.5
Additional paid-in capital	138.9	147.1	152.4	164.0	194.1	194.6	194.8	195.0	195.1	195.4	196.9	196.9	196.9	196.9	196.9	196.9
Retained earnings	(133.2)	(145.5)	(150.0)	(154.4)	(160.8)	(164.6)	(169.0)	(171.3)	(177.3)	(181.3)	(185.3)	(189.5)	(194.9)	(200.2)	(205.6)	(211.0)
Accumulated other comprehensive income												0.0	0.0	0.0	0.0	0.0
Minority Interest												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	16.8	13.3	9.6	4.7	(0.2)	(5.1)	(10.0)
Total stockholders' equity and liabil	15.6	10.7	11.3	18.7	37.4	35.2	31.1	28.2	22.2	18.5	15.0	11.3	6.4	1.5	(3.4)	(8.3)

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
	Q1A	Q2A	Q3A	Q4A	Q1A	Q2A	Q3A	Q4A	Q1A	Q2A	Q3A	Q4E	Q1E	Q2E	Q3E	Q4E
Book & Cash Value (per share)																
Book Value per Share (diluted)	0.28	0.17	0.16	0.24	0.35	0.28	0.25	0.23	0.18	0.14	0.11	0.08	0.04	(0.00)	(0.04)	(0.08)
Cash per Share (diluted)	0.31	0.18	0.17	0.26	0.35	0.30	0.26	0.23	0.18	0.15	0.12	0.09	0.04	0.00	(0.04)	(0.08)
Net cash per Share (diluted)	0.31	0.18	0.16	0.25	0.35	0.30	0.25	0.23	0.18	0.15	0.12	0.08	0.04	(0.00)	(0.04)	(0.09)

Source: Company reports and Ascendant Capital Markets estimates

Oragenics, Inc.

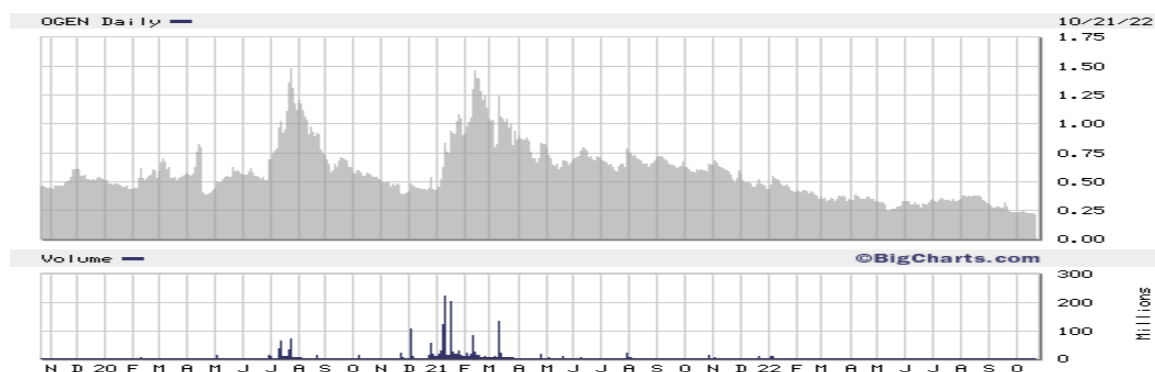
Cash Flow Statement (\$ mils)	Mar-20	Jun-20	Sep-20	Dec-20	2020	Mar-21	Jun-21	Sep-21	Dec-21	2021	Mar-22	Jun-22	Sep-22	Dec-22	2022	Mar-23	Jun-23	Sep-23	Dec-23	2023	
Fiscal Year End: December 31	Q1A	Q2A	Q3A	Q4A	FY-A	Q1A	Q2A	Q3A	Q4A	FY-A	Q1A	Q2A	Q3A	Q4E	FY-E	Q1E	Q2E	Q3E	Q4E	FY-E	
Cash flow from operating 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)	(4.0)	(3.9)	(4.2)	(18.2)	(5.4)	(5.4)	(5.4)	(5.4)	(21.5)	
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	
Stock comp	0.9	0.2	0.2	0.3	1.5	1.1	0.2	0.1	0.2	1.7	0.1	0.3	0.5	0.5	1.3	0.5	0.5	0.5	0.5	1.9	
Deferred income taxes					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					0.0					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	0.2	0.1	0.0	0.4	0.0	0.0	0.0	0.0	0.0	
Other assets					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	0.2	(0.4)	0.0	(0.1)	0.0	0.0	0.0	0.0	0.0	
Accrued expenses					0.0					0.0					0.0					0.0	
Other liabilities					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)	(3.4)	(3.8)	(3.7)	(16.5)	(4.9)	(4.9)	(4.9)	(4.9)	(19.6)	
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)	(0.3)	
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 activi	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)	(0.3)	
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	
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)	(0.1)	(0.1)		(0.4)					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	
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					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)	(0.1)	(0.1)	0.0	(0.4)	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)	(3.5)	(3.9)	(3.8)	(17.1)	(5.0)	(5.0)	(5.1)	(4.9)	(19.9)	
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	17.9	14.0	27.3	10.1	5.2	0.2	(4.8)	10.1	
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	17.9	14.0	10.1	10.1	5.2	0.2	(4.8)	(9.7)	(9.7)	

Source: Company reports and Ascendant Capital Markets estimates

ANALYST CERTIFICATION

Each analyst hereby certifies that the views expressed in this report reflect the analyst's personal views about the subject securities or issuers. Each analyst also certifies that no part of the analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed in this report. The analyst who prepared this report is compensated based upon the overall profitability of Ascendant Capital Markets, LLC, which may, from time to time, include the provision of investment banking, financial advisory and consulting services. Compensation for research is based on effectiveness in generating new ideas for clients, performance of recommendations, accuracy of earnings estimates, and service to clients.

Oragenics, Inc.



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

Report	Report Date	Rating	Price 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
10	6/1/2022	Buy	2.00
11	8/16/2022	Buy	2.25

- Ascendant Capital Markets, LLC has not received compensation for advisory or investment banking services from the company in the past 12 months.

IMPORTANT DISCLOSURES

This report has been distributed by Ascendant Capital Markets, LLC and is for the sole use of our clients. This report is based on current public information that we consider reliable, but we do not represent it is accurate or complete, and it should not be relied on as such. This report contains information from various sources, including United States government publications, The Wall Street Journal and other periodicals, Yahoo! Finance and other sources, and is for informational purposes only and is not a recommendation to trade in the securities of the companies mentioned within the report. We seek to update our research and recommendations as appropriate, but the large majority of reports are published at irregular intervals as we consider appropriate and, in some cases, as constrained by industry regulations.

We may have a business relationship with companies covered in this report. Ascendant Capital Markets, LLC may make a market in the securities of the subject company. We and our affiliates, officers, directors, and employees will from time to time have long or

short positions in, act as principal in, and buy or sell, the securities or derivatives (including options and warrants) thereof of covered companies referred to in this report. This report is not an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. It does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of individual clients. Clients should consider whether any information in this report is suitable for their particular circumstances and, if appropriate, seek professional advice, including tax advice. The price and value of the investments referred to in this report may fluctuate.

Following are some general risks that can adversely impact future operational and financial performance and share price valuation: (1) industry fundamentals with respect to legislation, mandates, incentives, customer demand, or product pricing; (2) issues relating to competing companies or products; (3) unforeseen developments with respect to management, financial condition or accounting policies or practices; or (4) external factors that affect the interest rates, currency, the economy or major segments of the economy. Past performance is not a guide to future performance, future returns are not guaranteed, and loss of original capital may occur. Certain transactions, including those involving futures, options, and other derivatives, give rise to substantial risk and are not suitable for all investors. Our report is disseminated primarily electronically, and, in some cases, in printed form. The information contained in this report is not incorporated into the contents of our website and should be read independently thereof. Copyright Ascendant Capital Markets, LLC. No part of this material may be copied, photocopied or duplicated by any means or redistributed without the prior written consent of Ascendant Capital Markets, LLC.

Risks & Considerations

Risks to attainment of our share price target include balance sheet/liquidity risks, failure of product candidates to demonstrate safety and efficacy in clinical trials, failure to gain regulatory approvals, ability to commercialize products, failure to obtain suitable reimbursement, competition, changing macroeconomic factors, investor sentiment for investing in biotech stocks, and changes in consumer or government priorities for healthcare.

Ascendant Capital Markets, LLC Rating System

BUY: We expect the stock to provide a total return of 15% or more within a 12-month period.

HOLD: We expect the stock to provide a total return of negative 15% to positive 15% within a 12-month period.

SELL: We expect the stock to have a negative total return of more than 15% within a 12-month period.

Total return is defined as price appreciation plus dividend yield.

Ascendant Capital Markets, LLC Rating System

Prior to January 31, 2014, ASCM used the following rating system:

Strong Buy: We expect the stock to provide a total return of 30% or more within a 12-month period.

Buy: We expect the stock to provide a total return of between 10% and 30% within a 12-month period.

Neutral: We expect the stock to provide a total return of between minus 10% and plus 10% within a 12-month period.

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

Speculative Buy: This rating is reserved for companies we believe have tremendous potential, but whose stocks are illiquid or whose equity market capitalizations are very small, often in the definition of a nano cap (below \$50 million in market cap). In general, for stocks ranked in this category, we expect the stock to provide a total return of 50% or more within a 12-month period. However, because of the illiquid nature of the stock's trading and/or the nano cap nature of the investment, we caution that these investments may not be suitable for all parties.

Total return is defined as price appreciation plus dividend yield.

Ascendant Capital Markets, LLC Distribution of Investment Ratings (as of October 7, 2022)

Rating	Count	Percent	Investment Banking Services Past 12 months	
			Count	Percent
Buy	43	98%	17	40%
Hold	0	0%	0	0%
Sell	1	2%	0	0%
Total	44	100%	17	39%

Other Important Disclosures

Our analysts use various valuation methodologies including discounted cash flow, price/earnings (P/E), enterprise value/EBITDAS, and P/E to growth rate, among others. Risks to our price targets include failure to achieve financial results, product risk, regulatory risk, general market conditions, and the risk of a change in economic conditions.

Dissemination of Research

Ascendant Capital Markets, LLC research is distributed electronically via the Thomson Reuters platforms, Bloomberg, Capital IQ and FactSet. Please contact your investment advisor or institutional salesperson for more information.

General Disclaimer

The information and opinions in this report were prepared by Ascendant Capital Markets, LLC. This information is not intended to be used as the primary basis of investment decisions and because of individual client objectives it should not be construed as advice designed to meet the particular investment needs of any investor. This material is for information purposes only and is not an offer or solicitation with respect to the purchase or sale of any security. The reader should assume that Ascendant Capital Markets, LLC may have a conflict of interest and should not rely solely on this report in evaluating whether or not to buy or sell securities of issuers discussed herein. The opinions, estimates, and projections contained in this report are those of Ascendant Capital Markets, LLC as of the date of this report and are subject to change without notice. Ascendant Capital Markets, LLC endeavors to ensure that the contents have been compiled or derived from sources that we believe are reliable and contain information and opinions that are accurate and complete. However, Ascendant Capital Markets, LLC makes no representation or warranty, express or implied, in respect thereof, takes no responsibility for any errors and omissions contained herein, and accepts no liability whatsoever for any loss arising from any use of, or reliance on, this report or its contents. Information may be available to Ascendant Capital Markets, LLC, or its affiliates that is not reflected in this report. This report is not to be construed as an offer or solicitation to buy or sell any security.

Additional Disclosures

Ascendant Capital Markets, LLC is a broker-dealer registered with the United States Securities and Exchange Commission (SEC) and a member of the FINRA and SIPC. Ascendant Capital Markets, LLC is not a Registered Investment Advisor nor is it an investment advisor registered with the Securities and Exchange Commission or with the securities regulators of any state, and at the present time is not eligible to file for federal registration.