

## Zacks Small-Cap Research

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## VolitionRx Ltd

(NYSE: VNRX)

**VNRX:** Management seeks to secure multiple licensing agreements in the human diagnostic space with the 1<sup>st</sup> one expected in 3Q 2025.

**Key financial goal for 2025** is to be cash neutral on a full year basis.

A discounted cash flow (DCF) model that applies a 10% discount rate and a 2% terminal growth rate indicates a price target of \$3.00 per share.

Current Price (08/22/25) \$0.69  
Valuation \$3.00

## OUTLOOK

**Primary operational goal for 2025** is to enter into multiple licensing agreements for human diagnostic applications, e.g. cancer & sepsis, emulating the strategy employed with the Nu.Q Veterinary Canine Cancer Test

In addition, **within Nu.Q NETs pillar**, the commercial strategy to utilize the **CE Mark** has brought on 11 hospital networks in Europe that are ordering and re-ordering Nu.Q products for human application

The final validation of the **Lung Cancer study** being conducted at National Taiwan University is **planned for completion in late-2025**.

## SUMMARY DATA

52-Week High \$0.94  
52-Week Low \$0.40  
One-Year Return (%) 2.69  
Beta 0.37  
Average Daily Volume (shrs.) 202,255

Shares Outstanding (million) 104.0  
Market Capitalization (\$mil.) \$71.5  
Short Interest Ratio (days) 0.9  
Institutional Ownership (%) 22.3  
Insider Ownership (%) 9.6

Annual Cash Dividend \$0.00  
Dividend Yield (%) 0.00

5-Yr. Historical Growth Rates  
Sales (%) N/M  
Earnings Per Share (%) N/A  
Dividend (%) N/A

P/E using TTM EPS N/M  
P/E using 2025 Estimate N/M  
P/E using 2026 Estimate N/A

Risk Level Above Average  
Type of Stock Small-Growth  
Industry Med-Tech/Diagnostic

## ZACKS ESTIMATES

## Revenue

(in thousands of \$)

	Q1	Q2	Q3	Q4	Year
	(Mar)	(Jun)	(Sep)	(Dec)	(Dec)
2022	114 A	40 A	33 A	120 A	306 A
2023	115 A	216 A	165 A	244 A	775 A
2024	171 A	396 A	475 A	192 A	1,234 A
2025	246 A	407 A	500 E	607 E	1,761 E

## Earnings per Share)

(EPS is operating earnings before non-recurring items)

	Q1	Q2	Q3	Q4	Year
	(Mar)	(Jun)	(Sep)	(Dec)	(Dec)
2022	-\$0.14 A	-\$0.14 A	-\$0.14 A	-\$0.13 A	-\$0.55 A
2023	-\$0.15 A	-\$0.14 A	-\$0.11 A	-\$0.11 A	-\$0.50 A
2024	-\$0.06 A	-\$0.08 A	-\$0.07 A	-\$0.06 A	-\$0.31 A
2025	-\$0.06 A	-\$0.06 A	-\$0.07 E	-\$0.07 E	-\$0.25 E

Quarterly EPS may not equal annual EPS total due to rounding.

## EXECUTIVE OVERVIEW

Management's key priorities for 2025 are to **secure licensing agreements in the human space in the Nu.Q NETs pillar** (targeting the diseases/conditions of cancer and sepsis) and achieve **cash neutrality by the end of the year**. Management anticipates signing the first Nu.Q NETs supply agreement in the human space during the third quarter. Currently, the company is in confidential discussions with over 10 companies. Executing licensing agreements with substantial upfront payments would help the company achieve cash neutrality when layered on top of the significant reduction in operating expenses that have already been implemented (operating costs declined 21.8% YOY in the first half of 2025).

In addition, within Nu.Q NETs pillar, the commercial strategy to utilize the **CE Mark** has brought on 11 hospital networks in Europe that are ordering and re-ordering Nu.Q products for human application with just as many other hospital networks in queue toward the evaluation process. Furthermore, **Nu.Q Discover**, which caters to disease research and drug development, posted strong results in the second quarter in both the Product and Service revenue segments. Nu.Q Discover is and will continue to benefit from contract on supplying an ongoing longitudinal Phase 1/2b study that will continue through 2026. Some of the strength in Nu.Q Discover can be attributed to the publication of a peer reviewed paper confirming Nu.Q usefulness across biological samples and disease models, but also Volition's publication of three (3) Application Notes on Nu.Q Discover.

Work continues on the **final validation study** being conducted **at the National Taiwan University**. With the study planned for completion in late-2025, a positive validation study, the Nu.Q test could be considered for use in future national lung cancer screening programs. Management is already in discussions with several national lung screening programs.



VolitionRx Presentation May 2025

### 2Q 2025 Highlights

Volition reported total revenues of **\$406,488, up 2.8% YOY** and **above expectations** of \$375,720. **Service revenue** (contract lab services) **increased 39.4%** to \$166,778 (a record high for a first quarter was driven by strong Nu.Q Discover service revenues). **Product revenues** from sales of the Nu.Q Vet cancer screening and H3.1 kits **declined 12.4%** to \$244,910; however, **product revenues improved 87% sequentially** versus the first quarter of 2025.

**Operating expenses decreased 9.2% YOY** as R&D expenses declined 26.8% and Sales and marketing expenses decreased 42.7% though G&A expenses increased 28.8% to approximately

\$2.94 million primarily due higher stock-based compensation (since some executives are receiving stock in compensation for reduced salaries which is a non-cash expense).

Net cash used in operating activities has been reduced by 30% YOY to roughly \$1.77 million a month during the first half of 2025.

**Recent Funding:** In May 2025, Volition issued a **\$7,500,000 Senior Secured Convertible Promissory Note** to Lind Global Asset Management XII LLC. **Net proceeds were \$5,802,799.** Subsequent to the end of the second quarter, Volition received **gross proceeds of \$1.21 million** from a registered direct offering. Cash and cash equivalents totaled approximately \$2.256 million as of June 30, 2025.

### **Synopsis of R&D-related Advancements**

(Papers, Posters, Application Notes, Press Releases etc.)

Since the beginning of April 2025, Volition-related clinical papers, posters, Application Notes consisted of:

- Two (2) presentations featuring Volition's **Nu.Q Vet Cancer Test at AMAMS 2025**
- Three (3) Application Notes, one (1) peer reviewed clinical paper and one (1) press release concerning **Nu.Q Discover** The plethora of supporting information bolstered this pillar and sparked the significant expansion of Nu.Q Discover in the second quarter,
- Two (2) **Nu.Q NETs** posters related to **traumatic injury**; one at the SHOCK Society conference and the other at the ISTH Congress
- One (1) **Nu.Q NETs** clinical paper and one (1) poster concerning **sepsis**, the being published in Critical Care, and the poster presented at the ATS International Conference
- Three (3) **cancer-related posters** presented at **ISMRC**
- One (1) press release announcing that Volition achieved the ability to **quantitatively determine nucleosomes levels** (a marker of NETosis) **in whole venous blood utilizing a bedside lateral flow test.**

**Details of each item in the Advancement List above follow below under their respective pillars.**

In addition, the poster presented at the European Society for Medical Oncology's European Lung Cancer Congress in March ("H3K27Me3-nucleosome is a strong prognostic biomarker in non-small cell lung cancer" is **currently being written up as a clinical study paper for peer review.**

Furthermore, work continues on the **final validation study** being conducted **at the National Taiwan University**. Patients continue to be enrolled 500 patient study, which is planned for completion in late-2025. If the findings of the validation study align with the previous results (i.e. patients can be bifurcated into high and low risk so that low risk patients can avoid unnecessary biopsies), the Nu.Q test could be considered for use in future national lung cancer screening programs. Interim findings are expected to be ready for presentation at ESMO (European Society of Clinical Oncology) meeting in October.

### **Nu.Q Vet Update**

In mid-March 2025, the supply agreement with Fujifilm Vet Systems was extended to include an **automated central reference lab platform, the Immunodiagnostic Systems (IDS) i10 automated analyzer**, which will enable a more rapid turnaround and a higher throughput level of assays. During the second quarter, Fujifilm Vet Systems validated the test results on the **IDS i10** in-house and the automated platform is on track to launch in the third quarter.

The company continues to **work on expanding the Nu.Q Vet Cancer test to the feline species**, which would trigger a \$5 million milestone payment that is associated with the supply agreement signed with Heska (an Antech/Mars company). Progress was made in the first quarter of 2025 with VolitionRx announcing that **nucleosomes have been detected in cats** in the publication of a **study entitled “Evaluation of plasma nucleosome concentrations and the effect of pre-analytical variables in healthy cats”** in BMC Veterinary Research.

**Powered by Nu.Q®: Broad Patent Protection for Products**

Regulatory	Non-regulated	Lab Developed Test	CE Mark / FDA	Research Use Only
Platform	<ul style="list-style-type: none"> <li>ELISA plate</li> <li>Elementi +™</li> <li>i10 automated</li> </ul>	<ul style="list-style-type: none"> <li>i10 automated</li> <li>Tech Transfer to other automated platforms (license)</li> </ul>	<ul style="list-style-type: none"> <li>i10 automated</li> <li>Tech Transfer to other automated platforms (license)</li> </ul>	<ul style="list-style-type: none"> <li>ELISA plate</li> <li>i10 automated</li> </ul>
Commercial strategy	<ul style="list-style-type: none"> <li>Licensing</li> <li>20+ countries serviced</li> </ul>	<ul style="list-style-type: none"> <li>Government-sponsored screening programs</li> <li>Direct sales</li> <li>Licensing (for regulated products)</li> <li>C LIA lab</li> </ul>	<ul style="list-style-type: none"> <li>Direct / Indirect Sales of CE-marked Nu.Q® NETs</li> <li>Licensing (for regulated product)</li> </ul>	<ul style="list-style-type: none"> <li>Direct sales of kits</li> <li>Service offering</li> <li>Distributors</li> </ul>

VolitionRx 2Q2025 Presentation August 2025

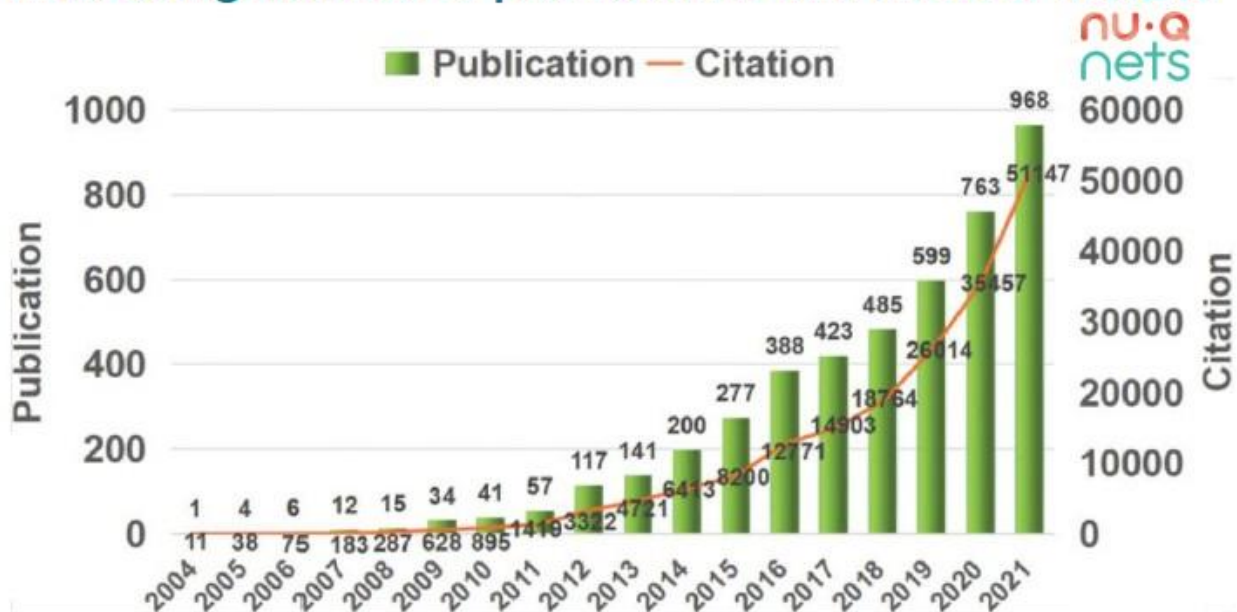
### Nu.Q NETs: Commercialization Effort in Human Diagnostics

Volition continues to be in **confidential discussions for licensing** the company’s **Nu.Q NETs human diagnostic applications with more than 10 companies**, seven of which are large cap companies. Volition’s management is currently in active negotiations with two (2) major companies are currently in active negotiations relative to Nu. Q and Capture Sequence technologies.

A **data room** that contains all clinical studies and other data related to **Capture-PCR** (human cancer detection method) and **Nu.Q NETs** for human **sepsis** has been set up (and continually being updated with data and publications) to support the licensing discussions and negotiations with interested parties. Management’s **goal** is to enter into multiple licensing agreements during 2025, emulating the strategy employed with the Nu.Q Veterinary Canine Cancer Test, which resulted in many licensing agreements with **upfront and milestone payments** (thus far \$23 million for Nu.Q Vet), along with **reoccurring revenue streams**.

**Interest in the NETs space is expanding dramatically as reflected in the increasing number of publications and citations on NETosis.**

## Increasing number of publications and interest in NETs



The annual frequency of publications and citations on NETosis

The number of publications and citations is represented by bar graphs and line graphs, respectively, with the number.

VolitionRx 2Q2025 Presentation August 2025

### Nu.Q NETs: Commercialization Effort to Leverage CE Mark

The second prong of the Nu.Q NETs commercial strategy is to utilize the **CE Mark** (Conformit  Europ enne) certification to **expand the use of the Nu.Q H3.1 NETs assay** under its **broad claim** for detecting and monitoring diseases **for any NETosis-related disease** (e.g. sepsis, COVID-19, influenza, autoimmune diseases and cancer).

During 1Q 2025, Volition recorded its **first revenue from the sales of a regulated, clinically approved product (CE Marked) in humans** and sales continued to be made during 2Q 2025 with some hospital networks re-ordering several times. During 2Q, two additional European hospital networks placed orders, bringing the total to 11. Furthermore, VolitionRx is in discussions with at least an additional 11 hospital networks, where some evaluations are anticipated to begin in the second half of 2025. The CE Mark certification process was completed in late May 2022.

### Nu.Q Discover: First human clinical study sponsored by a pharmaceutical company

In March 2025, VolitionRx made a significant **milestone announcement** that, **for the first time, Nu.Q Discover biomarkers will be utilized in a human clinical study** to measure disease progression and treatment response. An unnamed **leading pharmaceutical company** is using two Nu.Q Discover biomarkers in a **longitudinal Phase 1/2b clinical study**. Importantly, the use of Nu.Q Discover assays has transitioned from preclinical research to a clinical trial. Initial revenues from contract were booked in the second quarter. The project is expected to generate hundreds of thousands of dollars through its completion in 2026. If the project continues thereafter, one could expect the contract to further expand in 2027.

The pharmaceutical company's decision to incorporate Volition's Nu.Q biomarkers comes after a successful pilot study, in which two of Volition's Nu.Q assays obviously appear to provide biological insights that enhance the stratification of patients in order to personalize therapeutic treatments, to measure disease progression and to improve outcomes. The Phase 1/2b clinical study is expected to be conducted over 12-to-18 months.

## **Major Financial Goal: Be Cash Neutral for 2025**

Management's **key financial goal for 2025** is to be cash neutral on a full year basis. In other words, revenues (both product and service) and licensing fees (including upfront payments and milestone payments) should equal cash expenditures during the year. Management has made significant progress over the last 12 months with **R&D expenses, along with sales and marketing expenses**, which are declining over 30% YOY. **Net cash used in operating activities declined 30%** from \$2.524 million a month in 1H 2024 to \$1.767 million a month in 1H 2025.

## **Nu.Q Milestones Achieved Thus Far in 2025**

- During 1Q 2025, the first revenue recorded from **the sales of a regulated, clinically approved product**, specifically **CE Marked Nu.Q NETs** product from hospital networks in Europe.
- During 1Q 2025, Volition completed the first commercial sale of **High Throughput Synthetic Sepsis Model** that enables **real-time** measurement of NETs activation and inhibition in whole blood, which supports the development of new NETs-related disease therapeutics.
- During 2Q 2025, the first study to report the **detection of nucleosomes in cats was completed**; this pre-analytics work paves a path for the potential of cancer screening and monitoring in cats.
- During 2Q 2025, for the first time, **Nu.Q Discover** biomarkers will be utilized in a **human clinical study**, namely in a **Phase 1/2b clinical trial** by an unnamed leading pharmaceutical company

## **Expected Nu.Q Milestones in the Remainder of 2025**

- **Management anticipates securing multiple licensing agreements for Nu.Q NETs in diagnostic applications in human cancer and sepsis**
- Two major companies are currently **evaluating Volition's Nu.Q and Capture-Seq technologies**; first results expected in the second half of 2025.
- National Taiwan University Hospital team is progressing with a **pivotal final validation lung cancer screening study**. Interim analysis is anticipated to be presented at the European Society of Medical Oncology (ESMO) Congress in October 2025.
- Potentially, the development of the **Nu.Q Vet Feline Cancer Test** could trigger a **\$5 million milestone payment** in late 2025 or the first half of 2026.

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## **RECENT DEVELOPMENTS, PAPERS & POSTERS**

### **Nu.Q Foundational Breakthrough**

On July 8, 2025, Volition announced that it has achieved the ability to **quantitatively determine nucleosomes levels** (a marker of NETosis) **in whole venous blood utilizing a bedside lateral flow test**. The blinded study of 25 hospital patients at the point-of-care demonstrated that strongly correlated with results from Nu.Q nucleosome assays processed at a central laboratory. This new ability allows for diagnostic assessment of nucleosomes levels **at doctors' offices, emergency rooms and ICUs** without the time delay inherent in sending a blood sample to laboratory for testing.

## Nu.Q Vet

### Progress Toward Nu.Q Vet Feline Cancer Test

**Nu.Q Vet Milestone:** On May 19, 2025, VolitionRx announced the completion of an essential pre-analytic step toward the development of Nu.Q Vet products for felines with the publication of “*Evaluation of plasma nucleosome concentrations and the effect of pre-analytical variables in healthy cats*” in BMC Veterinary Research. This study is the **first to report the detection of H3.1 nucleosomes in healthy cats**, which opens the path for the potential of monitoring nucleosome levels in cats for screening for cancer. Data was also collected regarding an optimal collection and processing protocol.

VolitionRx’s first target feline lymphoma, which is the most common cause of cancer in cats. The enrollment of subjects in the following clinical study for the detection of feline lymphoma is started several months ago.

### Two (2) Presentations Featuring the Nu.Q Vet Cancer Test at AMAMS

**Nu.Q Vet (Presentations):** Two (2) presentations featuring Volition’s **Nu.Q Vet Cancer Test** occurred at the Asian Meeting of Animal Medicine Specialties (**AMAMS 2025**), which was held in Thailand between June 4<sup>th</sup> and 6<sup>th</sup> 2025. The presentations featured results from **two clinical studies** conducted by Dr Masahiko Sato, DVM, PhD, in conjunction with FujiFilm Vet Systems.

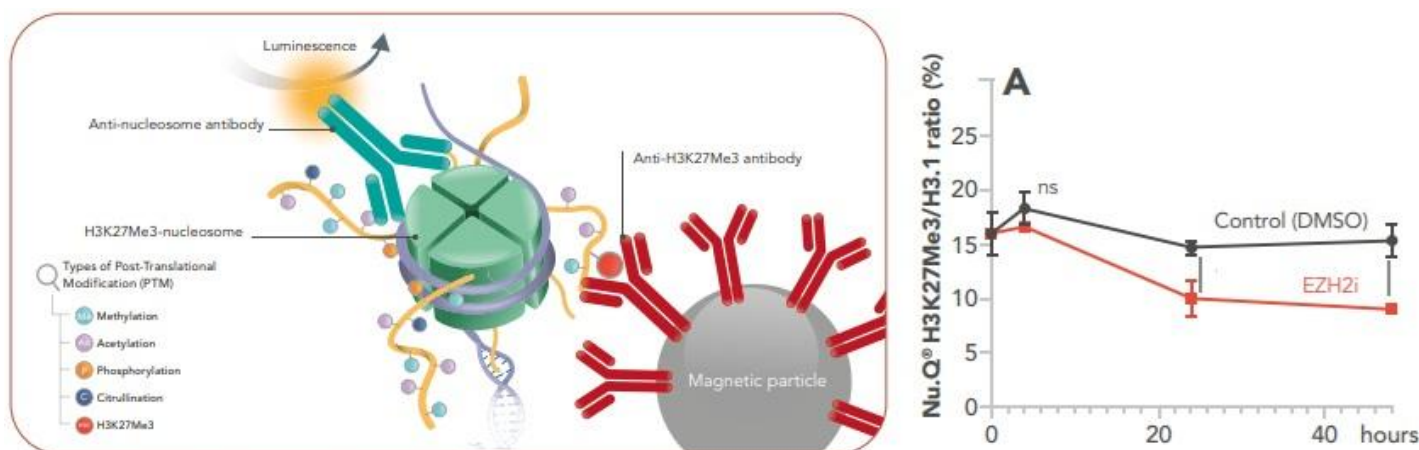
"Diagnostic Utility of Plasma Nucleosome Concentration in Differentiating Canine Chronic Enteropathy from Gastrointestinal Lymphoma," speaker - Kentaro Nabeshima

"Evaluation of Plasma Nucleosome Concentrations as a Biomarker for Canine Nasal Tumors," speaker - Chihoko Takahashi

## Nu.Q Discover

**Nu.Q Discover (Application Note):** On May 12, 2025, Volition posted a Nu.Q Discover Application Note titled “**Nu.Q® Discover: Immunoassay enables fast and reproducible monitoring of EZH2 inhibitor performance.**” The document describes that Volition has developed and validated the **Nu.Q® H3K27Me3 immunoassay**, which enables normalizing results with the Nu.Q H3.1 assay thereby supporting real-time assessment during preclinical and clinical development, which particularly useful in advancing cancer therapies.

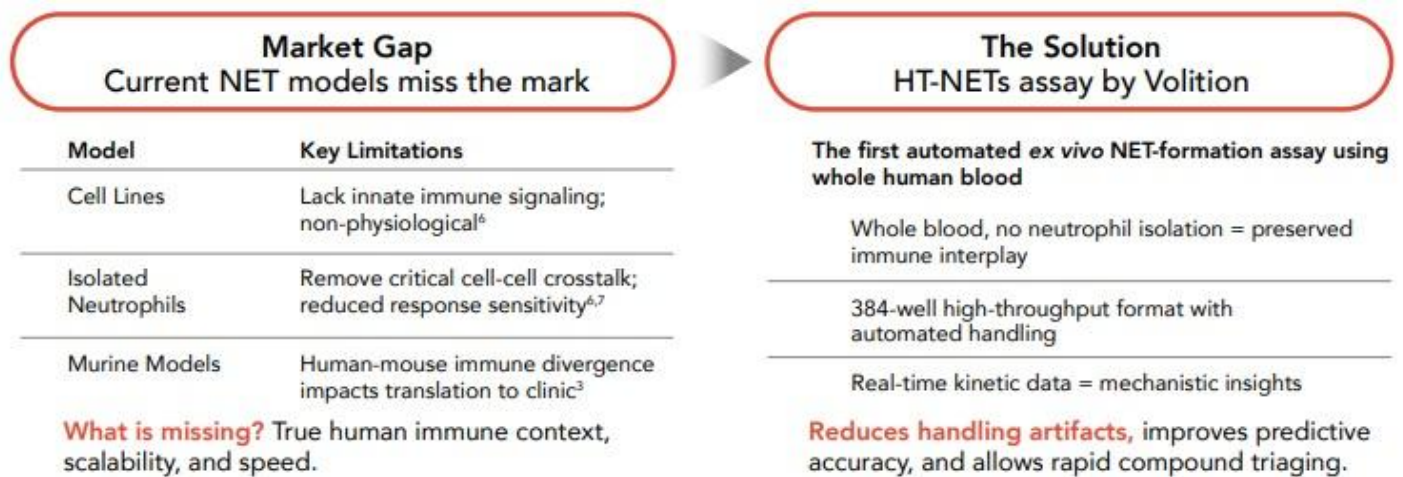
<https://volition.com/nuq-h3k27me3-assay-ezh2-inhibitor-performance/>



Volition Application Note: Nu.Q Discover: Immunoassay enables fast and reproducible monitoring of EZH2 inhibitor performance

**Nu.Q Discover (Application Note):** On June 23, 2025, Volition posted a Nu.Q Discover Application Note titled “**Nu.Q Discover: Building a better NET model for drug development – High-throughput (HT-NETs) assay to measure NET formation in whole blood.**” The document explains that Volition has developed the first *ex vivo* high throughput screening model (HT-NETs) that uses whole blood and enables rapid processing. The Application Note further highlights the advantage of the HT-NETs solution over other NET models.

<https://volition.com/high-throughput-assay-netosis-screening-whole-blood/>



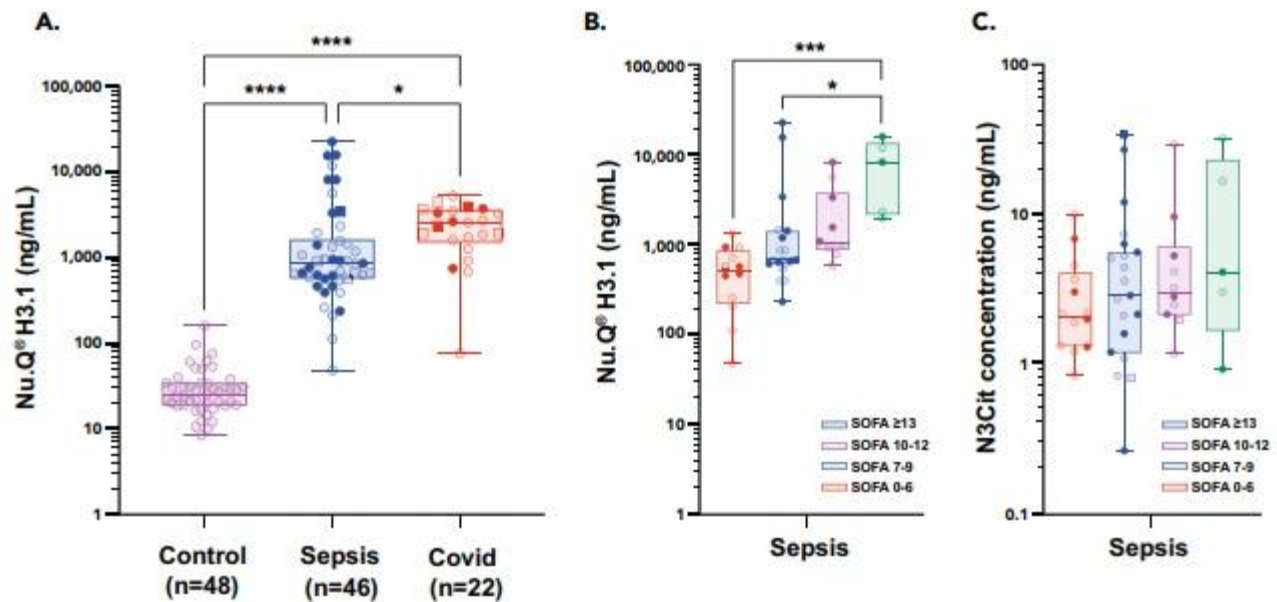
Volition Application Note: Nu.Q Discover: Building a better NET model for drug development

**Nu.Q Discover (clinical paper):** On July 7, 2025, the Nu.Q platform was again validated by a clinical paper titled: “**High-throughput epigenetic profiling immunoassays for accelerated disease research and clinical development,**” which was published in a peer-review publication (Journal of Biological Chemistry).

<https://volition.com/high-throughput-epigenetic-profiling-immunoassays/>

**Nu.Q Discover (Application Note):** On July 7, 2025, Volition posted a Nu.Q Discover Application Note titled “**Nu.Q Discover: Nu.Q® H3.1: A Breakthrough Immunoassay for Reliable and Robust NETs Quantification.**” The document is general overview of fundamentals of NETosis, the techniques to detect NETs and how Volition’s Nu.Q H3.1 chemiluminescent immunoassay was engineered and developed to quantify circulating H3.1 nucleosomes in human plasma. The Nu.Q H3.1 assay has distinct attributes (high specificity & reproducibility) that make it a strong tool to track NETs formation in order to assess the severity of NETs-related pathologies (such as sepsis and COVID-19), which enables clinicians to identify, stratify and monitor patient risk.

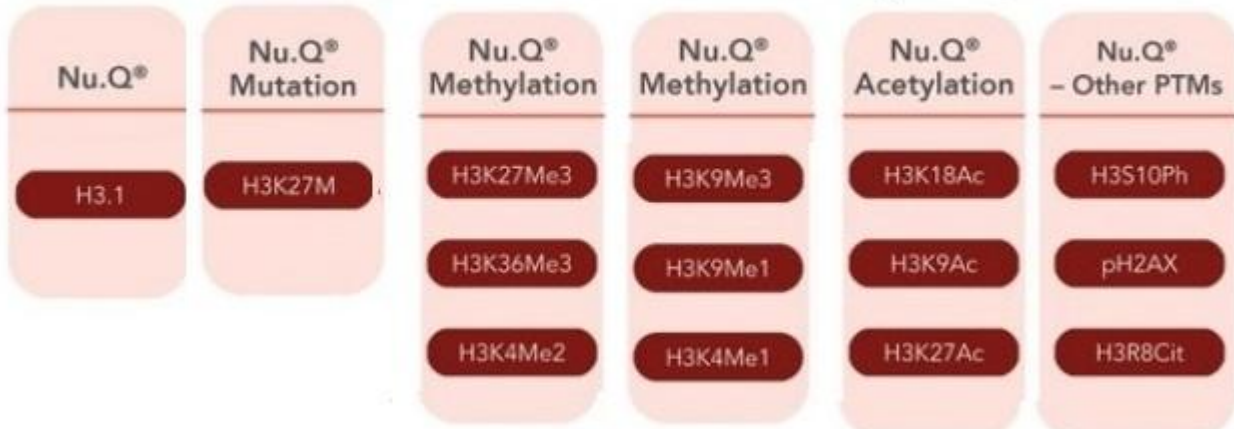
<https://volition.com/nuq-h3-1-immunoassay-nets-quantification/>



Volition Application Note: Nu.Q Discover: Nu.Q H3.1: A Breakthrough Immunoassay for Reliable and Robust NETs Quantification

**Nu.Q Discover Update:** On July 16, 2025, VolitionRx provided an **update on Nu.Q Discover:** With a **portfolio of 14 immunoassays**, Nu.Q Discover serves **over 20 clients** helping them accelerate disease research and drug development by offering epigenetic tools to aid in assessing disease severity, monitoring treatment response and understanding disease mechanisms.

## Nu.Q<sup>®</sup> Discover Assays



VolitionRx Press Release July 16, 2025

**Nu.Q Discover (clinical paper):** On August 6, 2025, a paper titled “**Quantification of H3.1-nucleosomes using a chemiluminescent immunoassay: A reliable method for neutrophil extracellular trap detection**” by M. Wagnies *et al* was published in PLOS One. The study developed and analytically validated that a chemiluminescent immunoassay can measure the level of circulating H3.1-nucleosomes in plasma and further concluded that **the detection of H3.1-nucleosomes by any immunoassay is a potential breakthrough method for “objective, robust, reproducible and quantitative” detection of NETs.**

<https://volition.com/quantification-h3-1-nucleosomes-using-chemiluminescent-immunoassay-a-reliable-method-neutrophil-extracellular-trap-detection/>

**Nu.Q Discover (Operational Results in 2Q/2025):** On August 14, 2025, VolitionRx reported financial results for the **second quarter** ending June 30, 2025. Nu.Q Discover had a strong quarter with demand for **Nu.Q assays being used as exploratory biomarkers in clinical trials** driving revenue growth in **both the product and service categories**. The demand was bolstered by **from repeat customers**.

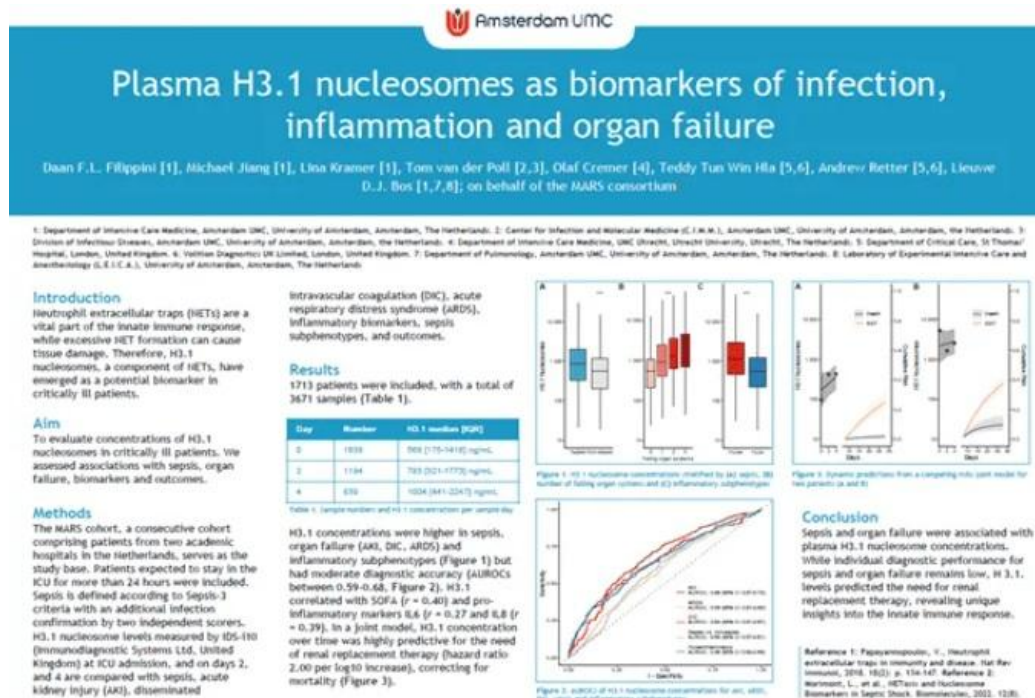
Going forward, a project with an unnamed **leading pharmaceutical company** that will use two (2) Nu.Q Discover biomarkers in a **longitudinal Phase 1/2b clinical study** that was initially announced on March 4<sup>th</sup> is now Nu.Q Discover's largest project and is **expected to generate revenue of hundreds of thousands of dollars**. Furthermore, **for the first time, Nu.Q Discover biomarkers will be utilized in a human clinical study** to measure disease progression and treatment response. In addition, the use of Nu.Q Discover assays has transitioned from preclinical research to a clinical trial. The target for completion of the Phase 1/2b study is in 2026.

## Nu.Q NETs

**Nu.Q NETs – sepsis (clinical paper):** On May 19, 2025, a paper titled: **“Plasma H3.1 nucleosomes as biomarkers of infection, inflammation and organ failure”** by Daan F. L. Filippini *et al* was **published in Critical Care**, BMC (biomedicalcentral.com). Since NETs are part of the body's innate immune response, the level of H3.1 nucleosomes has emerged as a potential biomarker for sepsis, organ dysfunction and hyperinflammatory host response. Conducted by the Mars consortium, this study evaluated 3,671 plasma samples from 1,713 critically ill patients and determined that H3.1 nucleosome concentrations were closely associated sepsis and organ failure, and, in particular, predicted the need for renal replacement therapy. **The paper concludes that the Nu.Q H3.1 is a clinically meaningful, biologically specific biomarker of NETosis.**

**Nu.Q NETs – sepsis (poster - ATS International Conference):** A poster titled **“Plasma H3.1 nucleosomes as biomarkers of infection, inflammation and organ failure,”** by Daan F. L. Filippini *et al* was presented at the ATS (American Thoracic Society) International Conference between May 17 and 21, 2025 in San Francisco. Usually about 14,000 pulmonary, critical care, and sleep professionals attend this conference.

<https://volition.com/plasma-h3-1-nucleosomes-biomarkers-infection-inflammation-organ-failure/>



VolitionRx website: <https://volition.com/plasma-h3-1-nucleosomes-biomarkers-infection-inflammation-organ-failure/>

**Nu.Q NETs (poster - SHOCK Society conference - traumatic injury):** A poster titled: “Quantification of circulating nucleosomes using novel assays shows elevated levels in patients after traumatic injury: a pilot study” by Sergio M Navarro *et al* was presented at the 48<sup>th</sup> Annual SHOCK Society conference between May 31 and June 3, 2025 in Boston.

[Quantification of circulating nucleosomes using novel assays shows elevated levels in patients after traumatic injury: a pilot study](https://volition.com/quantification-circulating-nucleosomes-using-novel-assays/)

**QUANTIFICATION OF CIRCULATING NUCLEOSOMES USING NOVEL ASSAYS SHOWS ELEVATED LEVELS IN PATIENTS AFTER TRAUMATIC INJURY: A PILOT STUDY**

Sergio M Navarro<sup>1</sup>, Riley Thompson<sup>1</sup>, Grant M. Spears<sup>1</sup>, Kent Bailey<sup>1</sup>, Louis Wang<sup>1</sup>, Mark Eckstein<sup>1</sup>, Terry Kelly<sup>1</sup>, Christine Wheeler<sup>1</sup>, Jing-Fai Dong<sup>1</sup>, Rosemary Kuzar<sup>1</sup>, Myung S. Park<sup>1</sup>

<sup>1</sup> Mayo Clinic, Department of Surgery, Division of Trauma Critical Care and General Surgery, 2. Volition Limited, Henderson, TN, US, 3. Beckwith Northwood Research, Division of Hematology, University of Washington, 4. Shock Trauma Center, University of Maryland

**BACKGROUND**

- The identification of reliable biomarkers to predict symptomatic VTE in trauma patients remains a clinical challenge. Circulating histones are elevated in trauma patients after injury; however, standardization of an assay for this biomarker is limited by its transient nature.<sup>1,2</sup>
- Nucleosomes have also been investigated, and by contrast, are stable in blood.<sup>3</sup> Quantification of nucleosomes, which are DNA wrapped around a histone protein core, has been shown to be a biomarker of sepsis, acute respiratory distress syndrome, and malignancy.<sup>4,5,6</sup>
- We hypothesized that levels of circulating nucleosomes quantified after traumatic injury, specifically histone H3.1 and its oligonucleotide post-translation modification, would be greater in trauma patients than in healthy volunteers, and would be greater in those who develop VTE compared to those who did not.

**METHODS**

- Trauma patients (pts) presenting to a Level I trauma center were evaluated for inclusion in a prospective case-cohort study. A subset of pts who developed incident, asymptomatic VTE and those who did not develop VTE within 90 days of discharge were selected in a 1:3 ratio, had samples collected within 12 hours injury, and were compared to pre-COVID-19 healthy volunteer samples as a non-trauma reference group. Circulating nucleosomes were quantified using Nu.Q® H3.1 and Nu.Q® H3R3 Cit assays, which has high consistency across lots, promoting standardization for translational use.

**FIGURE: NUCLEOSOME LEVELS IN VTE VS NON-VTE PATIENTS**

**RESULTS**

- A total of 530 trauma pts were analyzed (52 years [52, 65], 70.7% male, 94.5% blunt, ISS 17 [8, 27]), 126 pts with VTE vs 406 with non-VTE. No significant differences were found in age, sex, or mechanism between pts with VTE and those without. However, VTE pts had greater ISS scores (14 [0, 24], 2 [13, 34], p<0.001) and BM (20.1 [4.0, 34.4], 27.8 [23.8, 32.2], p=0.030). A greater percentage of VTE pts underwent surgery (57.1%, 33.0%, p<0.001) and received blood transfusions within 24 hours of injury (62.4%, 29.6%, p<0.001).
- Both H3.1 and H3R3 Cit levels were greater in both groups of trauma patients than healthy volunteers (p<0.001). H3.1 levels were significantly greater in trauma patients who developed VTE compared to those who did not (p<0.001), as was H3R3 Cit levels (p=0.012), Figure.

**CONCLUSION**

- These findings suggest that neutrophil extracellular traps may contribute to the development of VTE observed after injury. Nucleosome levels of Nu.Q® H3.1 and Nu.Q® H3R3 Cit needs to be further investigated as an early biomarker potentially predictive of VTE.

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VolitionRx website: <https://volition.com/quantification-circulating-nucleosomes-using-novel-assays/>

**Nu.Q NETs – (poster - ISTH Congress - traumatic injury):** A poster titled: “Profiling cell-free DNA To Better Understand Clinical Pathologies Immune Response and Disease Progression,” by Theresa K Kelly *et al* was presented at the ISTH (International Society on Thrombosis and Haemostasis) Congress between June 21 and 25, 2025 in Washington DC. The poster concludes that nucleosome levels and cfDNA correlate with disease state.

<https://volition.com/profiling-cell-free-dna-clinical-pathologies-immune-response-disease-progression/>

**Profiling cell-free DNA To Better Understand Clinical Pathologies Immune Response and Disease Progression**

Theresa K Kelly<sup>1</sup>, Christina Wheeler<sup>1</sup>, Finley Serneo<sup>1</sup>, Sharon Ballesteros<sup>1</sup>, Justin Cayford<sup>1</sup>, Andrew Retter<sup>2,3</sup>, Benjamin P. Berman<sup>1,4</sup>

1. Innovation Lab, Volition America, 6086 Corte Del Cedro, Carlsbad, CA, 92011, 2. Volition Diagnostics UK Limited, London, U.K 3. Critical Care, Guy's and St Thomas' NHS Foundation Trust, London, UK, 4. Department of Developmental Biology and Cancer Research, The Hebrew University of Jerusalem, Jerusalem, Israel

**Rationale**

- Cell-free (cf) DNA is released into the bloodstream as the result of cell death and can come from various cell types.
- The majority of cell free DNA circulates as nucleosomes, which are the core component of chromatin and contain DNA and a protein core (octamer).
- Cell-free DNA retains hallmarks indicating the cell or tissue of origin from which it derived.
- Cell free nucleosomes are rapidly cleared from circulation, thus circulating nucleosome levels can provide real time insight into patient health.
- Identifying the source of cfDNA can provide important information regarding patient health.

**Methods**

- EDTA plasma was collected from healthy individuals as well as patients with benign disease (N=347) and suspicion of sepsis (N=155).
- Circulating nucleosome levels were measured using an H3.1 Nu.Q® Assay

Nucleosomes are repeating units of Chromatin

Nu.Q® Assay

**Results**

Pre-analytic conditions affect nucleosome measurements

Cell Free DNA is largely mono- and di-nucleosome in length with some samples having high molecular weight DNA

H3.1 Nucleosome levels across disease

Disease Type	N	Mean	Median	SD	Min	Max
Benign Disease	347	20.1	14.0	11.5	0.0	100.0
Sepsis	155	27.8	20.1	13.5	0.0	100.0
Non-Sepsis	126	14.0	10.0	7.5	0.0	100.0

Origin derived cfDNA can be detected and levels increase prior to clinical markers of organ failure

Methylation cell of origin (MCO) Clinical liver marker

**Background**

- Neutrophils are the most abundant type of white blood cell that act as a first line of defense against infections
- Neutrophils release weblike structures called NETs that trap pathogens and prevent them from spreading
- Accumulation of NETs can lead to Thrombus formation and organ damage

Neutrophil Extracellular Traps (NETs)

Excessive NET formation can lead to Thrombus formation

Multigen dysfunction

Rapid Direct sequencing of Native DNA Oxford Nanopore Sequencing

Significantly more cfDNA is derived from Neutrophils in patients suspected of sepsis compared to benign conditions

**Conclusions**

- Nucleosome levels and cfDNA correlate with disease state
- cfDNA can identify cell of origin and provide clinically relevant information

VolitionRx website: <https://volition.com/profiling-cell-free-dna-clinical-pathologies-immune-response-disease-progression/>

Zacks Investment Research

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scr.zacks.com

## Nu.Q Cancer

Three (3) Volition-sponsored posters were presented at the ISMRC (14th International Symposium on Minimal Residual Cancer) Conference held between May 7 and 9, 2025 in Nice, France. The conference's by-line was "Liquid Biopsy: From Discovery to Clinical Implementation." There were 434 delegates and exhibitors from 38 countries in attendance. In addition to scientific sessions, 133 posters were presented in eight (8) guided poster tours.

**Nu.Q Cancer (poster - ISMRC conference):** A poster titled "Advances in Liquid Biopsy for Glioblastoma Diagnosis and Monitoring through Nucleosome Epigenetic Modifications Tracking," by Priscilla Van den Ackerveken *et al* was presented that concerns developing a liquid biopsy for the diagnosis and monitoring of patients with Glioblastoma (GBM), an aggressive cancerous brain tumor. The poster's findings include that the Nu.Q H3.1 immunoassay allows for the tracking of epigenetic biomarkers, which mirror the clinical course of GBM patients.

<https://volition.com/liquid-biopsy-glioblastoma-nucleosome-epigenetic-modifications-tracking/>

### Advances in Liquid Biopsy for Glioblastoma Diagnosis and Monitoring through Nucleosome Epigenetic Modifications Tracking

Priscilla Van den Ackerveken<sup>1</sup>, Jonathan Decarpentrie<sup>2</sup>, Clotilde Hannart<sup>1</sup>, Nathalie Hardat<sup>1</sup>, Matteo Riva<sup>3,4</sup>, Nathalie Doms<sup>5</sup>, Fabienne George<sup>6</sup>, Lionel d'Hondt<sup>7</sup>, Jonathan Douxif<sup>8,9</sup>, Marielle Herzog<sup>1</sup>

<sup>1</sup> Belgian Volition (P.L.), <sup>2</sup> Rue Pierre Leysen, Parc Scientifique Orsola NICC Namur, Belgium; <sup>3</sup> Department of Pharmacy, Clinical Pharmacology and Toxicology Research Unit, Namur Research Institute for Life Sciences, Faculty of Medicine, University of Namur, Namur, Belgium; <sup>4</sup> Laboratory of Tumor Immunology and Immunotherapy, Department of Oncology, Catholic University of Louvain, Louvain, Belgium; <sup>5</sup> Department of Neurosurgery, Université Catholique de Louvain, CHU UCL Namur, Namur, Belgium; <sup>6</sup> Qualiblood s.a., Research and Development Department, Namur, Belgium; <sup>7</sup> Belsant, Université Catholique de Louvain, CHU UCL Namur, Namur, Belgium; <sup>8</sup> Department of Oncology, Université Catholique de Louvain, CHU UCL Namur, Namur, Belgium.

#### Glioblastoma: Challenges & Unmet Needs

- Glioblastoma (GBM) is the most aggressive primary brain tumor in adults.
- Standard management includes surgery, radiotherapy, and chemotherapy
- High relapse rate and poor prognosis (median survival ~15 months).

➤ **Major gap:** No circulating biomarkers validated for GBM.

#### Our Goal : Develop a liquid biopsy approach

- Develop a liquid biopsy approach for the diagnostic, the patient follow-up and early relapse detection of glioblastoma

➤ Investigating circulating nucleosomes and their epigenetic marks as new Biomarkers.

#### Methods :

Circulating H3.1 nucleosomes and their epigenetic marks (PTMs) levels were analyzed, using the Nu.Q<sup>®</sup> immunoassays (Belgian Volition), in K2EDTA plasma from two independent cohorts including :

- **Cohort 1:** 67 samples from GBM patients collected at diagnosis and 99 samples from Healthy Donors
- **Cohort 2:** Multiple samples from 4 GBM patients collected longitudinally from diagnosis (pre-therapy; D-1) and throughout treatment, with a total of 21 samples assessed.

Logos: BIOWIN, Wallonie recherche SPW, Volition, IREC, QUALiblood, UNIVERSITÉ DE NAMUR, ISMRC 2025

VolitionRx website <https://volition.com/liquid-biopsy-glioblastoma-nucleosome-epigenetic-modifications-tracking/>

**Nu.Q Cancer (poster - ISMRC conference):** A poster titled "Liquid biopsy: measuring circulating H3K27Me3-nucleosomes in Lung Cancer patients is a strong prognostic biomarker and a potential aid in treatment selection," by Marie Piecyk *et al* was presented that investigated the relationship between lung cancer and H3K27Me3-nucleosome levels. The poster concludes that the level of circulating H3K27Me3-nucleosomes in lung cancer patients is a "strong prognostic biomarker" and has the potential to aid in personalized treatment decisions that should improve the overall survival (OS) rate.

<https://volition.com/liquid-biopsy-h3k27me3-nucleosomes-lung-cancer-biomarker-treatment/>

## Liquid biopsy: measuring circulating H3K27Me3-nucleosomes in Lung Cancer patients is a strong prognostic biomarker and a potential aid in treatment selection

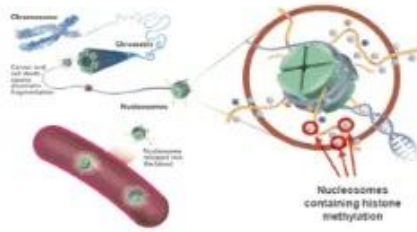


Marie Piecyk<sup>1</sup>, Emmanuel Grolleau<sup>2</sup>, Gaëlle Lescuyer<sup>2</sup>, Sébastien Couraud<sup>2</sup>, Patrick Merle<sup>3</sup>, Patrick Mas<sup>4</sup>, Sébastien Larive<sup>5</sup>, Michaeł Duruisseaux<sup>6</sup>, Oriane Pelton<sup>7</sup>, Gwenaëlle Schnoering<sup>1</sup>, Aristotelis Kotronoulas<sup>8</sup>, Julie Candiracci<sup>9</sup>, Léa Payen<sup>1</sup>, **Marielle Herzog<sup>1</sup>**

<sup>1</sup> Hospices Civils de Lyon, Center for Innovation in Cancerology of Lyon (ICCLY), Research Unit 3738, Department of Biochemistry and Molecular Biology, Pierre-Benite, France; <sup>2</sup> University Claude Bernard Lyon 1, Department of Pharmacology-Physiology Toxicology, Institute of Pharmacological and Biological Sciences of Lyon, France; <sup>3</sup> Hospices Civils de Lyon, Department of Acute Respiratory Disease and Thoracic Oncology, Lyon Sud Hospital, Pierre-Benite, France; <sup>4</sup> Service de Pneumologie, CHU Clermont-Ferrand, Clermont-Ferrand, France; <sup>5</sup> Service de Pneumologie, Groupe Hospitalier Le Portefeuille Sud, Villeurbanne, France; <sup>6</sup> Hospices Civils de Lyon, Department of Acute Respiratory Disease and Thoracic Oncology, Lyon EST Hospital, St-Etienne, France; <sup>7</sup> Hospices Civils de Lyon, Department of Acute Respiratory Disease and Thoracic Oncology, Lyon Nord Hospital, Lyon, France; <sup>8</sup> Belgian Volition SRL, 22 Rue Pitecas Ligeuse, Parc Scientifique Crelins, Levee, Belgium

### Background and Introduction

Early detection and treatment save lives, but people are often diagnosed with advanced disease when treatment options are limited. Once the disease is diagnosed, molecular profiling of circulating tumor DNA (ctDNA) is often used to select treatment and monitor disease. However, these techniques can lack sensitivity, which could lead to delays in starting more aggressive treatment. The histone post-translational modification H3K27Me3 have been reported to play an important role in the development and progression of lung cancer.



### Material and Methods

H3K27Me3-nucleosomes levels were analyzed in K2EDTA plasma samples from two independent cohorts including 665 LC patients at diagnosis and 304 LC patients under treatment using Nu.Q<sup>®</sup>H3K27Me3 immunoassay (Belgian Volition SRL, Belgium).

ctDNA analysis by NGS on the same samples was performed using a targeted ultra-deep technique (33 genes, 0.2% sensitivity, cohort 1 (n=201)) or Plasma SeqSensei (4 genes, 0.2% sensitivity, cohort 1 (n=260) or a comprehensive custom NGS assay (78 genes, 1% sensitivity, cohort 1 (n=204) and cohort 2 (n=304)).

The contribution of H3K27Me3-nucleosomes to molecular profiling and its prognostic value for overall survival (OS) were assessed (minimum 8 months follow-up, n=489).

**Objectives:**  
To evaluate if circulating H3K27Me3-nucleosome levels could offer additional insight in patients with negative molecular profiling and help improve patient management

Nucleosomes (DNA wrapped around core histone proteins) are released by cancer cells in bloodstream after cell death. Histones are subjected to a variety of epigenetic modification at specific residue (histone post-translational modifications (PTMs)) such as methylation and can be detected in patients' plasma.



VolitionRx website: <https://volition.com/liquid-biopsy-h3k27me3-nucleosomes-lung-cancer-biomarker-treatment/>

**Nu.Q Cancer (poster - (poster - ISMRC conference):** A poster titled “Recombinant nucleosomes as promising key reference materials for liquid biopsy next-generation sequencing,” by Priscilla Van den Ackerveken *et al* was presented that concludes that recombinant nucleosomes (rNuc-Ref) could be promising key reference materials for liquid biopsy next-generation sequencing .

<https://volition.com/recombinant-nucleosomes-as-promising-key-reference-materials-for-liquid-biopsy-next-generation-sequencing/>

## Recombinant nucleosomes as promising key reference materials for liquid biopsy next-generation sequencing.



Priscilla Van den Ackerveken<sup>1</sup>, Clotilde Hannart<sup>1</sup>, Annalisa Canale<sup>1</sup>, Gaëlle Lescuyer<sup>2</sup>, Laurie Di-Pilla<sup>2</sup>, Gwenaëlle Schnoering<sup>2</sup>, Eloyse Busby<sup>3</sup>, Alison Devonshire<sup>3</sup>, Frédéric Wulque<sup>1</sup>, M'hammed Bougoussa<sup>1</sup>, Jacob Micallef<sup>4</sup>, Léa Payen-Gay<sup>2,5</sup>, Marie Piecyk<sup>2</sup>, Marielle Herzog<sup>1</sup>.

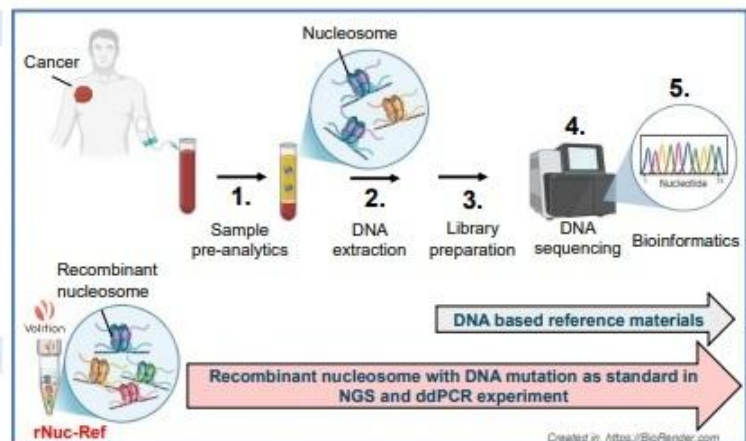
<sup>1</sup> Belgian Volition SRL, 22 Rue Pitecas Ligeuse, Parc Scientifique Crelins 5032 Ixelles, Belgium; <sup>2</sup> Center for Innovation in Cancerology of Lyon (ICCLY) EA 3738, Hospices Civils de Lyon, Faculty of Medicine and Molecular Lyon Department of Biochemistry and Molecular Biology, Sud, Claude Bernard University Lyon 1, 69621 Oullins, France; <sup>3</sup> Molecular Biology, National Measurement Laboratory, LGC 134, Teddington, Middlesex, TW11 0LY, United Kingdom; <sup>4</sup> Volition Diagnostics UK Ltd, 93-95 Gloucester Place, London, W1U 6JQ, UK; <sup>5</sup> Lyon-Sud Hospital, Hospices Civils de Lyon, Pierre-Benite, France.

### Background and Introduction

Liquid biopsy is promising for detecting low-frequency variants in cancer, but interpreting Next-generation sequencing (NGS) data remains challenging due to genome complexity and technical failures in sample preparation. While reference standards are increasingly used to calibrate and validate NGS assays, current materials lack key features of native cfDNA, such as nucleosome association. Typically, most available standards rely on naked DNA from cell lines, which limits their relevance for liquid biopsy assay standardization, as native cfDNA is nucleosome-protected and exhibits a distinct fragmentation pattern.

### Our Goal : develop a new reference material

To provide new reference materials for full control of the entire NGS workflow – from blood collection to bioinformatic analysis – using recombinant nucleosomes (rNuc-Ref).



Volition website: [volition.com/recombinant-nucleosomes-as-promising-key-reference-materials-for-liquid-biopsy-next-generation-sequencing/](https://volition.com/recombinant-nucleosomes-as-promising-key-reference-materials-for-liquid-biopsy-next-generation-sequencing/)

## RECENT FINANCIAL EVENTS

### 2Q 2025 Financial Results

On August 14, 2025 after the market close, VolitionRx reported financial results for the second quarter ending June 30, 2025. **Total revenues increased 2.8%** YOY to \$406,488 compared to \$395,797 in the second quarter of 2024. **Service revenue** (contract lab services) **increased 39.4%** to \$166,778 (a record high for a first quarter was driven by strong Nu.Q Discover service revenues, including from repeat customers) **while product revenues** from sales of the Nu.Q Vet cancer screening and H3.1 kits **declined 12.4%** to \$244,910. Of note, **product revenues improved 87% sequentially** versus the first quarter of 2025.

**Operating expenses decreased 9.2%** from \$7.39 million to \$6.70 million. **R&D expenses declined 26.8%** to approximately \$2.72 million, primarily due to a reduction in personnel expenses (full-time employees decreased from 62 to 48) and lower direct R&D expenses. **G&A expenses increased 28.8%** to approximately \$2.94 million primarily due higher stock-based compensation (since some executives are receiving stock in compensation for reduced salaries which is a non-cash expense) and higher legal & professional fees; full-time employees (FTE) decreased from 20 to 19. **Sales and marketing expenses decreased 42.7%** from 1.39 million to 1.04 million due to lower personnel expenses and stock-based compensation, which was partially offset by higher direct marketing & professional fees. FTE decreased from 19 to 11. Interest expense increased 51.9%.

For the second quarter, VolitionRx reported a net loss of \$6.28 million (or \$0.06 per diluted share for stockholders) versus a net loss of approximately \$7.06 million (or \$0.08 per diluted share) in the comparable quarter last year.

Year-to-date, shares outstanding increased by 8.% to 103,982,020 shares from 96,097,485 shares on December 31, 2025. As of June 30, 2025, Volition had approximately \$2.26 million cash-on-hand.

### 2025 Financings: Registered Direct Offerings Pursuant to Shelf Registrations

In late March 2025, **2,363,636 shares were issued** to several purchasers in a registered direct offering pursuant to a **shelf registration** statement (Form S-3) effective on November 8, 2021. The **offering price was \$0.55 per share**, which **included 5-year common stock purchase warrants** exercisable at \$0.66 per to purchase up to 1,739,087 common shares. The Insiders that participated in the offering did not receive any warrants. **Net proceeds were \$2,380,103.**

In late-April 2025, Volition entered into an ATM (at the market) Sales Agreement with JonesTrading Institutional Services LLC to sell the company's shares from time to time pursuant to a **shelf registration** statement (Form S-3) filed on November 8, 2024 and amended on April 11, 2025. Between April 22, 2025 and June 30, 2025 inclusive, **321,562 shares were issued for approximately \$161,075** pursuant to this ATM sales agreement, which is capped at aggregate offering proceeds of \$7.5 million.

On August 1, 2025, VolitionRx entered into a securities purchase agreement for the issuance of **156,250 shares** at an offering price of \$0.64 per share to certain insiders (directors and executive officers) and **1,734,375 shares** with accompanying 5-year stock purchase warrants exercisable into 1,734,375 shares at \$0.768 per share until August 5, 2030. To clarify, the insiders did not receive any warrants. **Gross proceeds were \$1.21 million.**

## **Financing: Senior Secured Convertible Note**

On May 15, 2025, an agreement was finalized to issue a **\$7,500,000 Senior Secured Convertible Promissory Note** to Lind Global Asset Management XII LLC. **Net proceeds were \$5,802,799.** The monthly payments on the convertible promissory note are \$416,666 cash payments or shares over 18 months after an initial 6-month repayment holiday. The transaction includes **5-year stock purchase warrant** exercisable into 13,020,834 common shares at a price of \$0.672 per share. A commitment fee of \$218,750 will be deducted from the gross proceeds. The Lind Note is convertible into common shares at a conversion price of \$0.72 per share, subject to adjustment.

## **Non-Dilutive Financings During 2025**

During the first quarter of 2025, VolitionRx secured a total of **\$1.98 million in non-dilutive funding**, of which \$121,566 was in the form of **grant income**, \$1,570,176 in **long-term debt financing** and \$294,603 in a **9-month loan agreement**.

During the second quarter of 2025, VolitionRx received a total of **\$75,991** in the form of **grant income**.

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## **1Q 2025 OPERATIONAL EVENTS BY PILLAR**

### **Nu.Q Vet**

#### **Volition Showcased Nu.Q Vet Cancer Test at the 97th WVC Annual Conference**

VolitionRx exhibited at the 97th Annual Western Veterinary Conference (**WVC**) held in Las Vegas between March 2<sup>nd</sup> and the 5<sup>th</sup>, 2025. Attendance was approximately 20,000 veterinary professionals. In addition to exhibiting, the company **sponsored three (3) events**:

"Detect, Treat, Monitor: Navigating the Canine Cancer Journey with Nu.Q® Vet Cancer Test," speaker - Dr. Sue Ettinger, DVM, DACVIM (Oncology) aka Dr. Sue Cancer Vet

"Utilizing the Nu.Q® Vet Cancer Test in Practice," speaker - Dr. Brett Cordes, DVM

"The Nu.Q® Vet Cancer Test - Early Detection with Canine Cancer Screening," speaker: Dr. Tom Butera, DVM (CEO of Volition Veterinary Diagnostics Development LLC)

### **Nu.Q NETs (Sepsis)**

#### **Showcased Nu.Q NETs for Sepsis at the 44th ISICEM Congress**

VolitionRx exhibited at the International Symposium on Intensive Care & Emergency Medicine held in Brussels, Belgium between March 18<sup>th</sup> and the 21<sup>st</sup>, 2025. As a silver sponsor, VolitionRx **hosted six (6) presentations**:

"Circulating NETs levels," speaker - Professor Djillali Annane

"Functional endotyping in sepsis," speaker - Professor Evangelos Giamarellos-Bourboulis

"Neutrophils in host response and organ dysfunction," speaker - Professor Michael Bauer

"The Time for Precision has Come," speaker - Professor Evangelos Giamarellos-Bourboulis

"H3.1 for early recognition of sepsis, " speaker - Professor Djillali Annane

"NETosis an important predictor of organ dysfunction," speaker - Dr. Lieuwe Bos

Additionally, Dr. Andrew Retter, Chief Medical Officer of VolitionRx was an invited speaker for the Praetorian Doctoral Network Satellite Symposium. The session's topic was "**Nu.Q® test to measure levels of circulating H3.1 nucleosomes as a surrogate marker for neutrophil extracellular traps (NETs) in blood.**"

### **Virtual Investor Event: Casting a New Light on Sepsis Management**

On February 14, 2025, Volition hosted a **virtual investor event** featuring **Dr. Andrew Retter** (Chief Medical Officer) and Gael Forterre (Chief Commercial Officer).

Dr. Retter focused on the clinical study based on a secondary analysis of the 971-patient SISPECT trial (described above) as well as the **1,713-patient UMC Amsterdam study** that retrospectively analyzed 4,283 samples, which initially showed that higher levels of H3.1 indicated a greater risk of multiple organ failure. The manuscript of the latter UMC Amsterdam study has been submitted, but is not yet available publicly. However, Dr. Retter hinted that the study shows promise in being able to differentiate between hyper- and hypo-inflammatory subtypes of sepsis, which would further help personalize therapeutic treatments for patients.

## Studies at Centers of Excellence



Study	Country	Description	Cohort Size	Status
Amsterdam UMC	Netherlands	Retrospective analysis of prospectively collected cohort	1,713 intensive care patients Multiple timepoints	<a href="#">Published.</a>
SISPECT	Germany	Retrospective analysis of prospectively collected cohort	971 intensive care patients Multiple timepoints	<a href="#">Completed.</a> <a href="#">Manuscript under review</a>
RHU RECORDS	France	Prospective, multi-center, placebo controlled, bio-marker-guided, adaptive Bayesian design basket trial	1,500 intensive care patients Interim analysis of 416 patients	Ongoing. Completion expected Q4 25
MD Andersen	U.S.	Prospective single-site observational study involving cancer patients with solid tumours and those presenting with clinical sepsis and or septic shock	120 patients	Ongoing. Completion expected Q4 25
ANOther Clinic	U.S.	To evaluate the level of circulating nucleosome quantified after traumatic injury, (VTE vs no VTE)	532 trauma patients 10 controls	Completed. Manuscript in development, submission anticipated H2 2025

VolitionRx 2Q2025 Presentation August 2025

### **First Commercial Project Utilizing Rapid High-Throughput Model in the Study of NETosis**

On February 6, 2025, VolitionRx announced the company's **first commercial sale** its **High Throughput Synthetic Sepsis method**, which measures activation and inhibition of NETs (Neutrophil Extracellular Traps) in whole blood **in real time**. This **breakthrough** allows for monitoring the release of NETs *in vivo* in real time and being able to monitor crosstalk events in whole blood, along with cellular responses. Then ability to measure and monitor the mechanisms at

play will lead to a better understanding of uncontrolled NETs formation. The ability to induce and inhibit NETs formation in blood using an automated high throughput system is a result of two years of work.

### **Large 971-patient Clinical Study Establishes Nu.Q NETs H3.1 as a Predictor of 28-day Mortality in Sepsis**

On January 28, 2025, a clinical study, based on a secondary analysis of the 971-patient SISPCT trial (NCT00832039 on Clinicaltrials.gov), was posted on medRxiv for peer review. The study entitled "*Prognostic value of admission H3.1 nucleosome levels in sepsis-associated acute kidney injury: a secondary analysis of the SISPCT randomised clinical trial*" demonstrates that **H3.1 nucleosome levels** (as measured by Volition's Nu.Q NETs H3.1 blood assay) **have prognostic value in patients with sepsis and septic shock**, principally for early mortality and organ dysfunction, particularly for the need of renal replacement therapy (RRT).

The paper indicates that the Nu.Q NETs H3.1 biomarker has a potential clinical utility for risk stratification in critically ill, sepsis patients. For example, all patients with **H3.1 levels greater than 20,000** died soon after admission to the hospital. Furthermore, patients with **H3.1 nucleosome levels in the 10,000-to-20,000 range** experienced a 25% risk of mortality. Additionally, patients with **H3.1 nucleosome levels greater than 2,500** nanograms per mil indicate an approximate 3.5-to-4.0 times risk of renal replacement therapy according to Forest plot analysis.

By being able to stratify a patient's risk level by elevated levels of H3.1, therapeutic intervention in critically ill sepsis patients could significantly enhance the management of these cases, enhance physician decision-making and improve patient outcomes.

### **Nu.Q NETs (Lung Cancer)**

National Taiwan University Hospital team is progressing with a **pivotal final lung cancer screening study**. The 60<sup>th</sup> patient enrolled on April 16<sup>th</sup>. The **interim analysis** is anticipated to be presented at the European Society of Medical Oncology (ESMO) Congress in October 2025.

### **Two Poster Presentations at ESMO's ELCC 2025**

VolitionRx presented **two posters** at the European Society for Medical Oncology's **European Lung Cancer Congress 2025** held in Paris, France between March 26<sup>th</sup> and the 29<sup>th</sup>, 2025.

**"Early detection of stage I/II NSCLC by immunoassay of crosslinked plasma cell free nucleosomes"** Presenter - Jake Micallef, PhD, MBA, Volition Chief Scientific Officer

<https://volition.com/wp-content/uploads/2025/03/ELCC-2025-Crystal.pdf>

**"H3K27Me3-nucleosome is a strong prognostic biomarker in non-small cell lung cancer (NSCLC): Interim results from the analysis of up to 832 patients at baseline"** presenter - Marie Piecyk, PhD, Researcher, Center for Innovation in Cancerology of Lyon (CICLY), Hospices Civils de Lyon

<https://volition.com/h3k27me3-nucleosome-is-a-strong-prognostic-biomarker-in-non-small-cell-lung-cancer-interim-results-from-the-analysis-of-up-to-832-patients-at-baseline/>

The latter poster demonstrates how Volition's Nu.Q H3K27Me3 biomarker, when combined with circulating tumor DNA (ctDNA), appears to improve the prognostic value for overall survival since the combination predicts survival regardless of the patient's cancer mutation status. This could help make better informed treatment decisions in cases of Non-Small Cell Lung Cancer (NSCLC).



## VALUATION

Utilizing a financial model based on DCF methodology, which forecasts out to 2031, and uses a 10% discount rate (based on CAPM), a 2% terminal growth rate and a terminal P/S multiple of 0.53, the indicated value of VNRX is **\$3.00 per share**.

<i>Large Capitalization Industry Comparables</i>	Ticker	P/E Current FY	Mkt Cap (\$billion)	TTM Price/ Book	TTM Price/ Sales	TTM EV/ EBITDA
<b>Industry Mean</b>		<b>14.19</b>	<b>23.97</b>	<b>1.33</b>	<b>0.53</b>	<b>8.86</b>
Industry Median		12.33	14.10	1.35	0.37	12.32
ARCHER-DANIELS-MIDLAND CO	ADM	15.92	30.23	1.35	0.37	12.32
BASF SE	BASFY	18.80	49.81	1.33	0.67	9.31
BUNGE LIMITED	BG	12.33	17.43	1.60	0.24	8.16
WLMAR INTERNATIONAL LTD	WLMY	11.99	14.10	0.69	0.21	6.81
INGREDION INC	INGR	11.92	8.28	1.95	1.16	7.69

## VolitionRx Limited

DCF Model					
	2024	2025	2026	2027	2028
Revenues	1,233,511	8,409,206	21,027,291	33,220,520	80,091,553
Cash costs	13,851,995	9,000,000	9,540,000	10,112,400	10,719,144
R&D costs	14,406,486	10,987,314	11,646,553	12,345,346	13,086,067
Tax rate	0.0%	8.0%	16.0%	22.0%	25.0%
Free Cash Flow after R&D costs	(27,024,970)	(10,651,859)	(133,780)	8,394,964	42,214,757
Discount Rate	10.0%				
NPV	322,748,205				
Terminal Value	149,876,165				
Cash From Option Exercises	16,872,316				
Cash From RSU Exercises	4,315,648				
Cash From Milestone Wts Ex.	29,258,510				
Probability	95.0%				
Total Sum of Parts	492,817,436				
Debt	5,771,375	2Q:2025			
Cash	2,255,996	2Q:2025			
Current Shares	103,982,020				
Option, Warrant & RSU Shares	58,234,651				
Diluted Shares	162,216,671				
				<b>Total NPV</b>	<b>489,302,057</b>
				<b>Share Price</b>	<b>\$3.02</b>

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## RISKS

- VolitionRx is a clinical stage company. Since its formation, the company has incurred losses due to the continued spending on the time-consuming and costly efforts to discover and develop diagnostic products, including conducting clinical studies, obtaining regulatory clearance/approval in the United States, Asia and Europe. Management expects continued losses from ongoing research and development expenses, along with administrative, manufacturing, sales and marketing expenses.
- Additional capital is required to continue funding management's strategic plan of commercializing the Nu.Q platform through the development of a suite of blood-based diagnostic tests. To date, VolitionRx has been successful in raising capital to fund the company's initiatives.
- As part of the effort to raise capital, shares outstanding have increased steadily over the last few years. Shares outstanding increased 10.6% in 2021, 7.6% in 2022, 41.5% in 2023 and 17.3% in 2024 as equity financings have helped fund the company's research & development costs and general corporate expenses. Commercialization of the company's products is expected to mitigate the rate of shareholder dilution.
- If third parties are believed to have infringed on the company's patents, the ensuing litigation would be time-consuming and costly. Conversely, third parties might believe that their proprietary rights have been infringed, which might also result in time-consuming and costly litigation, along with potentially impinging on Volition's ability to manufacture and sell certain future products.

## BALANCE SHEET

<b>VolitionRx Limited</b>					
(in \$US except share data)					
	2021	2022	2023	2024	2Q 2025
Period ending	12/31/2021	12/31/2022	12/31/2023	12/31/2024	6/30/2025
<b>ASSETS</b>					
Cash and cash equivalents	20,581,313	10,867,050	20,729,983	3,264,429	2,255,996
Accounts receivable	12,510	72,609	242,617	110,574	189,597
Prepaid expenses	598,367	784,920	521,370	338,660	474,468
Other current assets	786,642	447,566	360,125	343,145	343,246
<b>Total Current Assets</b>	<b>21,978,832</b>	<b>12,172,145</b>	<b>21,854,095</b>	<b>4,056,808</b>	<b>3,263,307</b>
Property, plant and equipment	4,911,077	5,393,012	5,523,013	4,429,152	4,500,065
Operating lease right-of-use assets	383,551	619,392	549,504	599,816	635,041
Intangible assets	216,876	110,505	23,886	313,747	306,377
<b>TOTAL ASSETS</b>	<b>27,490,336</b>	<b>18,295,054</b>	<b>27,950,498</b>	<b>9,399,523</b>	<b>8,704,790</b>
Accounts payable	1,542,457	3,043,008	3,211,287	2,766,178	2,351,261
Accrued liabilities	3,841,013	2,872,247	3,928,761	3,476,903	4,389,312
Deferred revenue	-	10,000,000	23,000,000	230,000	122,441
Management and directors' fees payable	71,303	71,119	59,625	30,086	54,392
Current portion of long-term debt	797,855	1,066,700	1,207,007	860,223	1,017,348
Current portion of financing lease liabilities	48,958	46,014	126,649	97,886	53,842
Current portion of operating lease liabilities	171,166	245,163	48,570	46,737	252,013
Current portion of grant repayable	43,100	41,836	55,855	60,979	69,345
Warrant liability	-	-	199,323	221,755	140,612
Derivative liability	-	-	-	-	623,790
Current portion of cv. note payable	-	-	-	-	166,522
<b>Total Current Liabilities</b>	<b>6,515,852</b>	<b>17,386,087</b>	<b>31,837,077</b>	<b>7,790,747</b>	<b>9,240,878</b>
Deferred revenue, net of current portion	-	-	-	22,663,400	22,663,400
Long-term debt	2,270,767	2,779,240	3,624,860	3,952,846	5,771,375
Financing lease liabilities	511,086	436,132	400,022	328,338	346,291
Operating lease liabilities	217,305	400,091	378,054	410,686	417,015
Grant repayable	253,221	420,466	422,707	361,242	443,911
Convertible note payable	-	-	-	-	2,920,242
<b>Non-Current Liabilities</b>	<b>3,252,379</b>	<b>4,035,929</b>	<b>4,825,643</b>	<b>27,716,512</b>	<b>32,562,234</b>
<b>TOTAL LIABILITIES</b>	<b>9,768,231</b>	<b>21,422,016</b>	<b>36,662,720</b>	<b>35,507,259</b>	<b>41,803,112</b>
<b>SHAREHOLDERS' EQUITY</b>					
Common Stock	53,772	57,873	81,898	96,098	103,982
Additional paid-in capital	154,730,938	164,397,468	194,448,414	204,154,994	209,777,146
Accumulated other comprehensive income	148,326	227,097	243,940	385,631	(444,294)
Accumulated deficit	(136,988,636)	(167,257,429)	(202,576,507)	(229,544,343)	(241,252,180)
<b>Total VolitionRx Stockholders' Equity</b>	<b>17,944,400</b>	<b>(2,574,991)</b>	<b>(7,802,255)</b>	<b>(24,907,620)</b>	<b>(31,815,346)</b>
Non-controlling interest	(222,295)	(551,971)	(909,967)	(1,200,116)	(1,282,976)
<b>Total Stockholders' Equity</b>	<b>17,722,105</b>	<b>(3,126,962)</b>	<b>(8,712,222)</b>	<b>(26,107,736)</b>	<b>(33,098,322)</b>
<b>TOTAL LIABILITIES &amp; STOCKHOLDERS' EQUITY</b>	<b>27,490,336</b>	<b>18,295,054</b>	<b>27,950,498</b>	<b>9,399,523</b>	<b>8,704,790</b>
Shares outstanding	53,772,261	57,873,379	81,898,321	96,097,485	103,982,020

## PROJECTED ANNUAL INCOME STATEMENTS

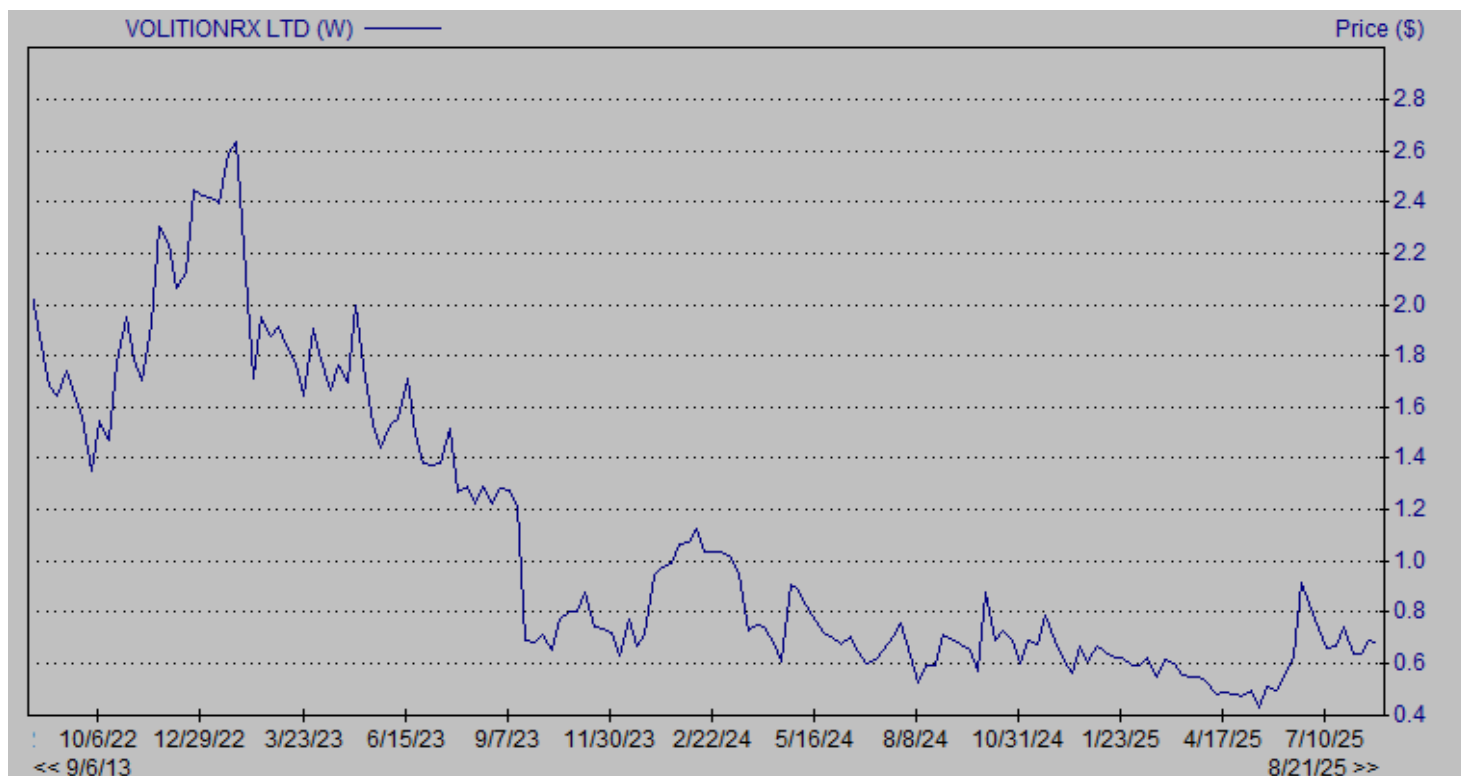
<b>VolitionRx Limited</b>						
Income Statement	2020	2021	2022	2023	2024	2025 E
(in \$US, except share and per share data)	12/31/2020	12/31/2021	12/31/2022	12/31/2023	12/31/2024	12/31/2025
Product	11,321	90,035	210,993	598,457	1,005,373	1,064,628
Agreement Fee			0	0	0	0
Service (Contract lab services)	0	0	92,488	175,476	228,138	732,255
Royalty (Research kits)	2,112	0	2,911	1,369	0	0
<b>Total Revenues</b>	<b>13,433</b>	<b>90,035</b>	<b>306,392</b>	<b>775,302</b>	<b>1,233,511</b>	<b>1,796,883</b>
<b>Expenses</b>						
Research and development	14,533,862	15,541,889	14,572,532	19,551,523	14,406,486	10,987,314
General and administrative	5,654,018	8,751,392	10,937,686	10,368,314	8,487,562	11,575,845
Sales and marketing	1,073,368	4,129,833	6,576,246	6,843,160	5,364,433	4,564,972
<b>Total Operating Expenses</b>	<b>21,261,248</b>	<b>28,423,114</b>	<b>32,086,464</b>	<b>36,762,997</b>	<b>28,258,481</b>	<b>27,128,131</b>
<b>Loss Before Other Income</b>	<b>(21,247,815)</b>	<b>(28,333,079)</b>	<b>(31,780,072)</b>	<b>(35,987,695)</b>	<b>(27,024,970)</b>	<b>(25,331,248)</b>
Grant income	635,513	1,522,533	1,229,425	214,451	103,368	222,557
Interest income	49,495	2,734	125,265	93,324	9,947	493
Interest (expense)	(129,799)	(155,803)	(173,087)	(221,622)	(340,362)	(490,737)
Gain (loss) chg in FV of wt liab.	-	-	-	240,311	28,763	(47,726)
Gain on disposal of fixed assets	293,312	(26,166)	0	(15,843)	(34,731)	330
Other income (expense)	0	0	0	0	0	0
<b>Total Other Income (Expenses)</b>	<b>848,521</b>	<b>1,343,298</b>	<b>1,181,603</b>	<b>310,621</b>	<b>(233,015)</b>	<b>(315,083)</b>
<b>Net Gain (Loss)</b>	<b>(20,399,294)</b>	<b>(26,989,781)</b>	<b>(30,598,469)</b>	<b>(35,677,074)</b>	<b>(27,257,985)</b>	<b>(25,646,331)</b>
Net Gain (Loss) Non-Controlling Int.	(47,179)	(175,116)	(329,676)	(357,996)	(290,149)	(150,873)
<b>Net Gain (Loss) - VNRX Stockholders</b>	<b>(20,352,115)</b>	<b>(26,814,665)</b>	<b>(30,268,793)</b>	<b>(35,319,078)</b>	<b>(26,967,836)</b>	<b>(25,495,457)</b>
Basic and diluted loss per share	<b>(0.45)</b>	<b>(0.51)</b>	<b>(0.55)</b>	<b>(0.50)</b>	<b>(0.31)</b>	<b>(0.24)</b>
Wgted. Avg. Shares Out. - diluted	45,278,847	52,655,885	55,350,401	71,234,565	86,531,172	104,245,269

## QUARTERLY INCOME STATEMENTS

<b>VolitionRx Limited</b>						
<b>Income Statement</b>	<b>2023</b>	<b>1Q</b>	<b>2Q</b>	<b>3Q</b>	<b>4Q</b>	<b>2024</b>
(in \$US except share and per share data)	<b>12/31/2023</b>	<b>2024</b>	<b>2024</b>	<b>2024</b>	<b>2024</b>	<b>2024</b>
		<b>3/31/2024</b>	<b>6/30/2024</b>	<b>9/30/2024</b>	<b>12/31/2024</b>	<b>12/31/2024</b>
Product	598,457	168,597	279,707	406,088	150,981	1,005,373
Agreement Fee	0	0	0	0	0	0
Service (Contract lab services)	175,476	2,938	116,090	68,434	40,676	228,138
Royalty (Research kits)	1,369	0	0	0	0	0
<b>Total Revenues</b>	<b>775,302</b>	<b>171,535</b>	<b>395,797</b>	<b>474,522</b>	<b>191,657</b>	<b>1,233,511</b>
<b>Expenses</b>						
Research and development	19,551,523	4,629,527	3,715,797	3,473,782	2,587,380	14,406,486
General and administrative	10,368,314	2,253,743	2,284,041	1,815,863	2,133,915	8,487,562
Sales and marketing	6,843,160	1,672,769	1,386,378	1,053,584	1,251,702	5,364,433
<b>Total Operating Expenses</b>	<b>36,762,997</b>	<b>8,556,039</b>	<b>7,386,216</b>	<b>6,343,229</b>	<b>5,972,997</b>	<b>28,258,481</b>
<b>Loss Before Other Income</b>	<b>(35,987,695)</b>	<b>(8,384,504)</b>	<b>(6,990,419)</b>	<b>(5,868,707)</b>	<b>(5,781,340)</b>	<b>(27,024,970)</b>
Grant income	214,451	0	0	85,378	17,990	103,368
Interest income	93,324	8,654	450	530	313	9,947
Interest (expense)	(221,622)	(77,233)	(81,182)	(89,456)	(92,491)	(340,362)
Gain (loss) chg in FV of wt liab.	240,311	(18,922)	44,474	4,872	(1,661)	28,763
Gain (loss) disposal of fixed assets	(15,843)	0	(33,498)	(1,195)	(38)	(34,731)
Other income (expense)	0	0	0	0	0	0
<b>Total Other Income (Expenses)</b>	<b>310,621</b>	<b>(87,501)</b>	<b>(69,756)</b>	<b>129</b>	<b>(75,887)</b>	<b>(233,015)</b>
<b>Net Gain (Loss)</b>	<b>(35,677,074)</b>	<b>(8,472,005)</b>	<b>(7,060,175)</b>	<b>(5,868,578)</b>	<b>(5,857,227)</b>	<b>(27,257,985)</b>
Net Gain (Loss) Non-Controlling Int.	(357,996)	(104,617)	(74,629)	(47,049)	(63,854)	(290,149)
<b>Net Gain (Loss) - VNRX Stockholders</b>	<b>(35,319,078)</b>	<b>(8,367,388)</b>	<b>(6,985,546)</b>	<b>(5,821,529)</b>	<b>(5,793,373)</b>	<b>(26,967,836)</b>
Basic and diluted loss per share	<b>(0.50)</b>	<b>(0.10)</b>	<b>(0.08)</b>	<b>(0.07)</b>	<b>(0.06)</b>	<b>(0.31)</b>
Wgtd. Avg. Shares Out. - diluted	71,234,565	81,956,660	82,669,335	87,886,012	93,612,000	86,531,172

<b>VolitionRx Limited</b>						
<b>Income Statement</b>		<b>1Q</b>	<b>2Q</b>	<b>3Q E</b>	<b>4Q E</b>	<b>Estimate</b>
(in \$US except share and per share data)	<b>2024</b>	<b>2025</b>	<b>2025</b>	<b>2025</b>	<b>2025</b>	<b>2025</b>
	<b>12/31/2024</b>	<b>3/31/2025</b>	<b>6/30/2025</b>	<b>9/30/2025</b>	<b>12/31/2025</b>	<b>12/31/2025</b>
Product	1,005,373	130,909	244,910	306,138	382,672	1,064,628
Agreement Fee	0	0	0	0	0	0
Service (Contract lab services)	228,138	115,476	161,778	202,223	252,778	732,255
Royalty (Research kits)	0	0	0	0	0	0
<b>Total Revenues</b>	<b>1,233,511</b>	<b>246,385</b>	<b>406,688</b>	<b>508,360</b>	<b>635,450</b>	<b>1,796,883</b>
<b>Expenses</b>						
Research and development	14,406,486	2,607,444	2,720,207	2,801,813	2,857,849	10,987,314
General and administrative	8,487,562	2,243,362	2,940,754	3,087,792	3,303,937	11,575,845
Sales and marketing	5,364,433	917,299	1,043,534	1,200,064	1,404,075	4,564,972
<b>Total Operating Expenses</b>	<b>28,258,481</b>	<b>5,768,105</b>	<b>6,704,495</b>	<b>7,089,669</b>	<b>7,565,862</b>	<b>27,128,131</b>
<b>Loss Before Other Income</b>	<b>(27,024,970)</b>	<b>(5,521,720)</b>	<b>(6,297,807)</b>	<b>(6,581,309)</b>	<b>(6,930,412)</b>	<b>(25,331,248)</b>
Grant income	103,368	121,566	75,991	0	25,000	222,557
Interest income	9,947	158	160	100	75	493
Interest (expense)	(340,362)	(96,669)	(123,356)	(131,356)	(139,356)	(490,737)
Amortization of debt discount	0	0	(325,305)	(292,775)	(263,497)	(881,577)
Gain (loss) FV of derivative liab.	0	0	418,681	0	0	0
Gain (loss) chg in FV of wt liab.	28,763	20,038	(62,764)	5,000	(10,000)	(47,726)
Gain (loss) disposal of fixed assets	(34,731)	0	330	0	0	330
Other income (expense)	0	0	0	0	0	0
<b>Total Other Income (Expenses)</b>	<b>(233,015)</b>	<b>45,093</b>	<b>(16,263)</b>	<b>(419,031)</b>	<b>(387,778)</b>	<b>(1,196,660)</b>
<b>Net Gain (Loss)</b>	<b>(27,257,985)</b>	<b>(5,476,627)</b>	<b>(6,314,070)</b>	<b>(7,000,340)</b>	<b>(7,318,190)</b>	<b>(26,527,907)</b>
Net Gain (Loss) Non-Controlling Int.	(290,149)	(52,868)	(29,992)	(33,252)	(34,762)	(150,873)
<b>Net Gain (Loss) - VNRX Stockholders</b>	<b>(26,967,836)</b>	<b>(5,423,759)</b>	<b>(6,284,078)</b>	<b>(6,967,088)</b>	<b>(7,283,428)</b>	<b>(26,377,034)</b>
Basic and diluted loss per share	<b>(0.31)</b>	<b>(0.06)</b>	<b>(0.06)</b>	<b>(0.07)</b>	<b>(0.07)</b>	<b>(0.25)</b>
Wgtd. Avg. Shares Out. - diluted	86,531,172	96,536,052	102,654,095	106,760,259	111,030,669	104,245,269

## HISTORICAL STOCK PRICE



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