

REVIEWER'S REPORT ON THE MASTER'S THESIS

Candidate: Ngô Anh Đào

Thesis title: Evaluation of Paraclinical Characteristics and Related Factors in Ovarian Cancer Patients with High and Low Mutation Risk in Vietnam

Major: Biomedical Engineering Technology

Code: 84290.01QTD

Reviewer: Dr. Nguyen Le Khanh

University: Vietnam National University, International School

CONTENT

I. COMMENT:

1. The necessity, scientific significance and practicality of the thesis:

The thesis addresses an important and timely issue in oncology and precision medicine. Ovarian cancer remains one of the most lethal gynecological malignancies, and the identification of BRCA1/2 mutations plays a critical role in prognosis, treatment selection, and genetic counseling. However, genetic testing is often costly and not readily accessible to all patients in Vietnam.

By investigating the association between routine paraclinical characteristics and mutation risk, the study explores a practical approach to identifying patients who may benefit most from genetic testing. The findings may contribute to the development of cost-effective preliminary screening strategies and support more efficient allocation of healthcare resources. Therefore, the topic possesses both scientific significance and practical relevance in the current healthcare context of Vietnam.

2. Reliability and relevance of the thesis (*which clearly states the non-duplication of the thesis, the relevance of thesis title to thesis content – of content to training major; reliability and modernity of research methodology, etc.*)

The thesis topic is appropriate for the Biomedical Engineering Technology program, as it combines clinical data analysis, statistical modeling, and biomedical interpretation to address a healthcare problem.

The candidate has provided a declaration of originality and followed a suitable research methodology. The retrospective cross-sectional design is acceptable for the stated objectives.

The sample size of 223 patients exceeds the minimum required sample size, thereby enhancing the reliability of the statistical analyses.

The statistical methods used in the study, including descriptive statistics, Mann-Whitney U tests, and multivariable logistic regression analysis, are appropriate and correctly applied. The use of Odds Ratios to assess the independent association between paraclinical variables and mutation risk is suitable for the study design and research objectives.

Overall, the study demonstrates methodological rigor and provides findings that are reliable within the limitations inherent to retrospective observational research.

3. Advantages and disadvantages of the thesis's content, structure, and format

3.1. Advantages

The study successfully identified several laboratory indicators associated with mutation risk. Notably, the multivariable logistic regression model revealed that Albumin and MCH were independently associated with mutation risk. The candidate clearly quantified these relationships, showing that a one unit increase in Albumin increased the odds of belonging to the high-risk group by approximately 15% (OR = 1.15), whereas a one-unit increase in MCH reduced the odds by approximately 14% (OR = 0.86).

The candidate compared demographic and clinical characteristics with findings from both domestic and international publications. Differences in patient age distribution and disease characteristics were discussed in relation to previous studies, and the interpretation of coagulation-related indicators was supported by relevant recent literature.

The study focuses on routinely available laboratory parameters rather than expensive molecular tests. This approach increases the practical value of the research and may provide useful information for clinicians working in resource-limited settings.

3.2. Disadvantages

Although Albumin and MCH were identified as independent predictors, the thesis provides limited discussion regarding the potential biological mechanisms underlying these associations.

Several issues should be corrected before final submission:

- The numbering sequence of tables in Chapter 4 requires revision. For example, Table 4.3 appears before Table 4.2.
- Several typographical and formatting errors were identified, including incorrect terminology such as "Student't test" instead of "Student's t-test," and some missing spaces or punctuation marks.

II. QUESTIONING (Optional)

What future research approaches would you recommend to validate the predictive value of Albumin and MCH?

III. CONCLUSION *(which clearly confirms the extent of satisfying requirements for a master thesis; whether the thesis can be submitted to the master thesis examination committee)*

The thesis addresses a clinically relevant and scientifically meaningful topic. The candidate has applied appropriate research methods and conducted the analyses in a systematic manner. The findings provide useful preliminary evidence regarding the association between routine laboratory indicators and mutation risk among ovarian cancer patients.

In my opinion, the thesis satisfies the academic requirements for a Master's degree in Biomedical Engineering Technology. I recommend that the thesis be accepted and submitted to the Master Thesis Examination Committee for defense

Hanoi, 04 June, 2026

REVIEWER



Nguyễn Lê Khanh

HOC

REVIEWER'S REPORT ON THE MASTER'S THESIS

Candidate: Ngô Anh Dao

Thesis title:

- *In Vietnamese:* ĐÁNH GIÁ ĐẶC ĐIỂM CẬN LÂM SÀNG VÀ CÁC YẾU TỐ LIÊN QUAN Ở BỆNH NHÂN UNG THƯ BUỒNG TRỨNG CÓ NGUY CƠ ĐỘT BIẾN CAO VÀ THẤP Ở VIỆT NAM

- *In English:* EVALUATION OF PARACLINICAL CHARACTERISTICS AND RELATED FACTORS IN OVARIAN CANCER PATIENTS WITH HIGH AND LOW MUTATION RISK IN VIETNAM

Code: 84290.01QTD

Reviewer: Hoang Van Vinh, PhD

University: Institute of Microbiology and Biotechnology, VNU

CONTENT

I. COMMENT:

1. The necessity, scientific significance and practicality of the thesis:



The thesis addresses an important topic in ovarian cancer research. BRCA1/2 gene mutations are closely related to cancer prognosis and treatment, especially in personalized medicine. However, genetic testing is still expensive and not always available in many healthcare settings in Vietnam.

For this reason, studying paraclinical characteristics that may be related to BRCA mutation risk is necessary and meaningful. The study provides initial information on the differences between ovarian cancer patients with high and low risk of carrying BRCA mutations.

The thesis also has scientific value because it applies appropriate statistical methods to analyze clinical data and identify factors related to mutation risk.

From a practical point of view, the findings may help support patient screening and provide useful information for future studies. Although further research is needed to confirm the results, the thesis offers valuable preliminary data and has potential clinical application.

2. Reliability and relevance of the thesis *(which clearly states the non-duplication of the thesis, the relevance of thesis title to thesis content – of content to training major; reliability and modernity of research methodology, etc.)*

The thesis title is suitable for the research objectives and the study content. The topic is relevant to the Master's program in Biomedical Engineering Technology because it applies medical data analysis to support cancer assessment and patient management.

The literature review provides the necessary background on ovarian cancer, BRCA gene mutations, and related laboratory indicators. The research methods are clearly described and appropriate for the study objectives. The use of statistical analysis helps improve the reliability of the results.

The study included 223 ovarian cancer patients from major hospitals in Hanoi. The sample size is acceptable for a master's thesis. The results are presented clearly and follow the research objectives.

However, there are some limitations. The study grouped patients based on the risk of carrying BRCA mutations, not on actual genetic testing results. Therefore, the findings reflect mutation risk rather than confirmed BRCA mutations. In addition, the study used a retrospective cross-sectional design, which has some limitations in explaining cause-and-effect relationships. The data were collected from a limited number of hospitals, so the results may not fully represent all ovarian cancer patients in Vietnam.

Overall, the thesis is relevant, reasonably reliable, and meets the requirements of a master's level research project.

3. Advantages and disadvantages of the thesis's content, structure, and format

3.1. Advantages

- The thesis addresses a relevant and meaningful topic in ovarian cancer research and personalized medicine.
- The study objectives are clearly stated and are consistent with the thesis title and research content.
- The study includes a relatively large sample size of 223 ovarian cancer patients collected from major hospitals in Hanoi.
- Appropriate statistical methods were used to compare patient groups and identify factors associated with mutation risk.
- The results provide useful preliminary data and may support future research on BRCA mutation risk assessment in ovarian cancer patients in Vietnam.

3.2. Disadvantages

- The study classified patients based on the risk of carrying BRCA mutations rather than confirmed BRCA genetic testing results.
- The retrospective cross-sectional design limits the ability to determine cause-and-effect relationships.

- The study population was collected from a limited number of hospitals in Hanoi, which may affect the representativeness of the findings.
- Some findings were statistically significant, but their biological and clinical significance could be discussed in greater detail.

II. QUESTIONING (Optional)

Question 1:

In this study, patients were classified into high-risk and low-risk groups for BRCA mutations based on clinical criteria rather than actual BRCA genetic testing. How do you think this approach may affect the reliability of the findings, and how would you improve the study design in future research?

Question 2:

After multivariate logistic regression analysis, only MCH and albumin remained significantly associated with BRCA mutation risk. Can you explain the possible biological or clinical reasons behind these findings, and how these indicators might be used in clinical practice?

III. CONCLUSION *(which clearly confirms the extent of satisfying requirements for a master thesis; whether the thesis can be submitted to the master thesis examination committee)*

In my opinion, the thesis satisfies the requirements for a Master's thesis in Biomedical Engineering Technology. I recommend that the thesis be accepted for defense before the Master's Thesis Examination Committee after revision according to the reviewer's comments.

Hanoi, ...6th...Jun....., 2026

REVIEWER

(full name, sign)



Hoàng Văn Vinh

Hanoi, 06/06/2026



MINUTES OF MASTER THESIS DEFENSE

The master thesis defense session of student: Ngô Anh Đào (date of birth: 15/02/2002) was conducted at .00:00.. (hour/minute), on 06/06/2026 at VNU - International School.

Thesis title:

- *In Vietnamese*: Đánh giá đặc điểm cận lâm sàng và các yếu tố liên quan ở bệnh nhân ung thư buồng trứng có nguy cơ đột biến cao và thấp ở Việt Nam

- *In English*: Evaluation of paraclinical characteristics and related factors in ovarian cancer patients with high and low mutation risk in Vietnam

Code: 84290.01.QTD.....

Members of the Master thesis examination committee are present: 05/5

No	Full name	University/ Organizations	Role in Committee	Note
1	TS. Nguyễn Quang Thuận	Trường Quốc tế, ĐHQGHN	Chairman	
2	TS. Hoàng Văn Vinh	Viện Vi sinh vật và Công nghệ sinh học, ĐHQGHN	Reviewer	
3	TS. Nguyễn Lê Khanh	Trường Đại học Công nghệ, ĐHQGHN	Reviewer	
4	GS.TS. Nguyễn Đức Thuận	Trường Quốc tế, ĐHQGHN	Secretary	
5	TS. Thân Văn Thái	Trường Quốc tế, ĐHQGHN	Committee member	

PART I: INTRODUCTION

1. Representatives of VNU - International School made welcoming remarks including:

- Introduction of the master thesis defense and participants;

- Announcement about Decision of the President of Vietnam National University, Hanoi on establishing the Master thesis examination committee (Decision No. 1858/QĐ-ĐHQGHN issued on 13/05/2026).

PART II: THESIS DEFENSE SESSION

1. TS. Nguyễn Quang Thuận – The Chair led the Master thesis examination committee.

2. GS.TS. Nguyễn Đức Thuận – The Secretary of the Committee announced the scientific background and conditions for master thesis defense of the candidate (candidate's scientific background file and academic results are attached).

3. The candidate Ngô Anh Đào made a presentation on the thesis.

4. TS. Hoàng Văn Vinh and TS. Nguyễn Lê Khanh – Reviewers commented on the thesis (with attached documents).

5. Questioning period from members of the Committee:

1. Why author focus on the clinical of the patient only but others methods like gene mutation?

2. What future research approaches would you recommend to validate the predictive value of Albumin and MHC?

6. Candidate's answers

1. This study first focused on the clinical of the patients and that is the data for future analysis of the other methods.

2. I would recommend for more application of the information technology on analyzing and classifying the characteristics of high and low risk patients carrying gene mutation on people with ovarian cancer that related to Albumin and MHC values.

7. The Secretary of the Committee commented on the thesis conducting progress of the candidate (with attached document).

8. Committee's Deliberations:

- Election of Vote counting committee:

1. Chair: TS. Nguyễn Quang Thuận.

2. Member: GS.TS. Nguyễn Đức Thuận.

- The examination committee voted by secret ballot.

- The vote counting committee:

+ The Chair reported the vote counting result (with attached vote counting record).

- The Examination committee deliberated and came to a conclusion on the thesis examination by reaching a consensus on the assessment resolution on the thesis. The resolution concluded:

The thesis satisfies the requirements of the master degree.

PART III: OUTCOME OF THE EXAMINATION PROCESS

1. The Chair of the Vote Counting committee announced the result of the ballot on the thesis examination.
2. The Chair of the Examination Committee announced the resolution on the thesis examination.
3. The Chair of the Examination Committee made statements and gave controls to the organizer.

The thesis defense session ended at .08...45... (hour/minute), on .06.../..06../2026

The thesis evaluation committee approved the student's thesis with the result (score scale): 9.6... point (In word: ~~Nine point six~~.....). Students are required to revise some content as requested by the Council and submit the completed project to the Information and Library Center, Vietnam National University, Hanoi, as per regulations.

**SECRETARY OF THE THESIS
EXAMINATION COMMITTEE**


GS. TS. Nguyễn Đức Thuận

**CHAIR OF THE THESIS
EXAMINATION COMMITTEE**


TS. Nguyễn Quang Thuận

CERTIFICATION BY VNU - INTERNATIONAL SCHOOL

P.P. RECTOR

OFFICE OF ACADEMIC AFFAIRS


Hoàng Tuyết Minh



Hanoi, 06.../06/2026

**MINUTES OF VOTE COUNTING COMMITTEE
OF THE MASTER THESIS EXAMINATION COMMITTEE**

Pursuant to the Decision No. 1858/QĐ-ĐHQGHN issued on 13/05/2026 by President of Vietnam National University, Hanoi on establishing the Master thesis examination committee, the committee conducted a meeting at 08:00 (hour/minute), on 06/06/2026 at VNU - International School to examine the master thesis of the candidate Ngô Anh Đào.

Thesis title:

- *In Vietnamese*: Đánh giá đặc điểm cận lâm sàng và các yếu tố liên quan ở bệnh nhân ung thư buồng trứng có nguy cơ đột biến cao và thấp ở Việt Nam

- *In English*: Evaluation of paraclinical characteristics and related factors in ovarian cancer patients with high and low mutation risk in Vietnam

Major: Master in Biomedical Engineering Technology

Code: 84.290.01 QTD.....

The vote counting committee was voted:

1. Chair: TS. Hoàng Văn Vinh..
2. Member: GS.TS. Nguyễn Đức Thuận

The number of members presenting is 05/05, the members who are opponents are 02/05

Number of votes distributed to members: 05....

Number of unused remaining votes: 0....

Number of valid votes: 05....

Number of invalid votes: 0....

Number of votes for the score 9.4 is: 01....

Number of votes for the score .9.5. is: .01.....

Number of votes for the score .9.6. is: .01.....

Number of votes for the score .9.7. is: .01.....

Number of votes for the score ...10. is: .01.....

Average score: ...9.6.../...10.....

(In text:Nine point six.....)

Note: The thesis score is the average of scores marked by the examination committee's members presenting in the thesis defenses session, taken to one decimal place and not rounded.

**MEMBER OF THE VOTE
COUNTING COMMITTEE**



GS.TS. Nguyễn Đức Thuận

**CHAIR OF THE VOTE
COUNTING COMMITTEE**



TS. Hoàng Văn Vinh

CERTIFICATION BY VNU - INTERNATIONAL SCHOOL

P.P. RECTOR

OFFICE OF ACADEMIC AFFAIRS



Hoàng Tuyết Minh



DEFENSE SCORE SHEET FOR MASTER THESIS

Pursuant to the Decision 1858/QĐ-ĐHQGHN issued on 13/05/2026 by President of Vietnam National University, Hanoi on establishing the Master thesis examination committee to examine the master thesis of the student Ngô Anh Đào (date of birth: 15/02/2002).

Thesis title:

- In Vietnamese: Đánh giá đặc điểm cận lâm sàng và các yếu tố liên quan ở bệnh nhân ung thư buồng trứng có nguy cơ đột biến cao và thấp ở Việt Nam

- In English: Evaluation of paraclinical characteristics and related factors in ovarian cancer patients with high and low mutation risk in Vietnam

Code: 84.290.01.01D.....

Comments:

.....
- The topic possessed both scientific significance and practical relevance in the current healthcare context of Vietnam.....

.....
- The student's performance was good at conducting the analyses in a systematic manner and writing the report.....

.....
- Some typographical & formatting errors should be corrected.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Result: *(The mark of each committee member is on point scale, possibly odd to one decimal place):*

- In number:9.7..... marks
- In text:Nine point seven... marks

Hanoi,06 Jan....., 2026

Marker

Lotu
Nguyễn Lê Khanh



DEFENSE SCORE SHEET FOR MASTER THESIS

Pursuant to the Decision 1858/QĐ-DH-QGHN issued on 13/05/2026 by President of Vietnam National University, Hanoi on establishing the Master thesis examination committee to examine the master thesis of the student Ngô Anh Đào (date of birth: 15/02/2002).

Thesis title:

- In Vietnamese: Đánh giá đặc điểm cận lâm sàng và các yếu tố liên quan ở bệnh nhân ung thư buồng trứng có nguy cơ đột biến cao và thấp ở Việt Nam

- In English: Evaluation of paraclinical characteristics and related factors in ovarian cancer patients with high and low mutation risk in Vietnam

Code: ...84290.01.01D...

Comments:

The thesis addresses a relevant topic in ovarian cancer research and personalized medicine. The study objectives are clear and consistent with the research content.

Some limitations remain, including the use of risk classification instead of confirmed BRCA genetic testing and the retrospective cross-sectional study design. However, these limitations do not significantly affect the overall quality of the thesis.

The thesis satisfies the requirements for a Master's thesis in Biomedical Engineering Technology and is recommended for defense.

- In number:9.6..... marks

- In text: marks

Handwritten signature: Hoàng Văn Vinh



DEFENSE SCORE SHEET FOR MASTER THESIS

Pursuant to the Decision 1858/QĐ-DH/QGHN issued on 13/05/2026 by President of Vietnam National University, Hanoi on establishing the Master thesis examination committee to examine the master thesis of the student Ngô Anh Đào (date of birth: 15/02/2002).

Thesis title:

- In Vietnamese: Đánh giá đặc điểm cận lâm sàng và các yếu tố liên quan ở bệnh nhân ung thư buồng trứng có nguy cơ đột biến cao và thấp ở Việt Nam
- In English: Evaluation of paraclinical characteristics and related factors in ovarian cancer patients with high and low mutation risk in Vietnam

Code: 84290.01 ATD.....

Comments:

- Topic is interesting.
- + Student has good performance.
- The results are promising, which is published in the database indexed by Scopus.
- + Limitation: Sample size is still small.
- + It should be better if the student discussed more about data / technique for data analysis.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Result: (The mark of each committee member is on point scale, possibly odd to one decimal place):

- In number: 9.5 marks
- In text: nine and a half marks

Hanoi, 06 June , 2026
Marker

Nguyen Thi Thanh
Nguyen Thi Thanh



DEFENSE SCORE SHEET FOR MASTER THESIS

Pursuant to the Decision 1858/QĐ-ĐHQGHN issued on 13/05/2026 by President of Vietnam National University, Hanoi on establishing the Master thesis examination committee to examine the master thesis of the student Ngô Anh Đào (date of birth: 15/02/2002).

Thesis title:

- In Vietnamese: Đánh giá đặc điểm cận lâm sàng và các yếu tố liên quan ở bệnh nhân ung thư buồng trứng có nguy cơ đột biến cao và thấp ở Việt Nam

- In English: Evaluation of paraclinical characteristics and related factors in ovarian cancer patients with high and low mutation risk in Vietnam

Code: ...84290...01 QTD.....

Comments:

- Nội dung tốt, có kết hợp với thực tế
Tài liệu khá đầy đủ

Góp ý: Nên làm rõ hơn nguy cơ thấp và nguy cơ Cao
Bổ sung công bố học phần phù hợp với đề tài vào phần liên quan

Ch: Đồ án đáp ứng yêu cầu của luận văn Thạc sĩ

Result: (The mark of each committee member is on point scale, possibly odd to one decimal place):

- In number: 10 marks
- In text: Ten marks

Hanoi, 06th June 2026

Marker



Nguyễn Đức Thuận



DEFENSE SCORE SHEET FOR MASTER THESIS

Pursuant to the Decision 1858/QĐ-ĐHQGHN issued on 13/05/2026 by President of Vietnam National University, Hanoi on establishing the Master thesis examination committee to examine the master thesis of the student Ngô Anh Đào (date of birth: 15/02/2002).

Thesis title:

- In Vietnamese: Đánh giá đặc điểm cận lâm sàng và các yếu tố liên quan ở bệnh nhân ung thư buồng trứng có nguy cơ đột biến cao và thấp ở Việt Nam
- In English: Evaluation of paraclinical characteristics and related factors in ovarian cancer patients with high and low mutation risk in Vietnam

Code: 84290.01.GTD.....

Comments:

- + The topic is interesting and possessed the significant of scientific and practical in healthcare in Vietnam.
- + The student performance was very good
- + The study limitation: Small sample size and geographical
- + Check again typographical and grammar errors

- In number: 9.4 marks

- In text: Nine point four marks

Marker

Đu
Thân Văn Thái



Hanoi, 06/06/2026

**RESOLUTION OF THE MASTER THESIS
EXAMINATION COMMITTEE**

Pursuant to the Decision 1858/QĐ-DH-QGHN issued on 13/05/2026 by President of Vietnam National University, Hanoi on establishing the Master thesis examination committee to examine the master thesis of the student Ngô Anh Đào (date of birth: 15/02/2002).

Thesis title:

- *In Vietnamese*: Đánh giá đặc điểm cận lâm sàng và các yếu tố liên quan ở bệnh nhân ung thư buồng trứng có nguy cơ đột biến cao và thấp ở Việt Nam

- *In English*: Evaluation of paraclinical characteristics and related factors in ovarian cancer patients with high and low mutation risk in Vietnam

Code: ..84290..01..QTD.....

The thesis examination committee conducted a meeting at ...08:00... (hour/minute), on 06/06/2026 at VNU - International School.

After the candidate's presentation on the thesis, opponents' review, committee members' comments, candidate's answers, the committee deliberated and came to a conclusion:

1. The necessity, scientific significance and practicality of the thesis topic

- Necessity address an importance and timely issue oncology and precision medicine
- Necessity address the identification of BRCA1/2 mutation that plays a critical role in prognosis, treatment selection and genetic counseling
- Scientific significance and practical relevance in current healthcare context in Vietnam

2. Structure, research methodology, references, etc., of the thesis

- Structure well organized and clear
- Research methodology is appropriate

- References: appropriate and up-to-date.

3. Research outcomes:

- The study successfully explores a practical approach to identify patients who may benefit most from genetic testing.
- The study successfully contribute to the development of cost-effective screening strategies and support efficient of healthcare resources.

4. Limitations and requests for thesis correction (if any):

- Limit on discussion regarding the potential biological mechanism underlying these association.
- Check again grammar error

5. Overall evaluation:

- The thesis addressed a clinically relevant and scientifically meaningful topic.
- The thesis satisfies the requirements for the master degree.

.....
.....
Thesis marked: ..9.6../..9.6..

Outcome of master thesis defense of candidate ...Ngô Anh Đào

Qualified: ☒

Unqualified: ☐

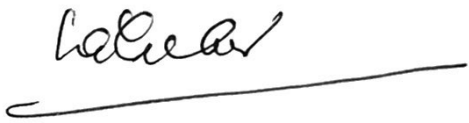
(The thesis is qualified if the average score marked by the Committee is 5.5 or higher).

This resolution is passed by ..05../..05.. members of the Committee.

**SECRETARY OF THE THESIS
EXAMINATION COMMITTEE**


GS. TS. Nguyễn Đức Thuận

**CHAIR OF THE THESIS
EXAMINATION COMMITTEE**


TS. Nguyễn Quang Thuận

CERTIFICATION BY VNU - INTERNATIONAL SCHOOL

**P.P. RECTOR
OFFICE OF ACADEMIC AFFAIRS**


Hoàng Tuyết Minh