

A
Thesis
On
**SYNTHESIS, CHARACTERIZATION AND EVALUATION OF ANTICANCER
ACTIVITY OF 1,3,4-OXADIAZOLE DERIVATIVES AGAINST BREAST
CANCER (MCF-7)**

Submitted for
Partial Fulfillment of the Requirement for the Award of Degree of
Master of Pharmacy
(Pharmaceutical Chemistry)

By

REKHA SINGH

Enrollment No.GGV/20/06337

Roll No. 20703009

Under the Supervision of

Dr. JAGADISH SINGH

Assistant Professor (Pharmaceutical Chemistry)



SESSION 2021-2022

DEPARTMENT OF PHARMACY

GURU GHASIDAS VISHWAVIDYALAYA (A Central University)

BILASPUR (C.G.)

A
Thesis
On

**SYNTHESIS, CHARACTERIZATION AND EVALUATION OF ANTICANCER
ACTIVITY OF 1,3,4- OXADIAZOLE DERIVATIVES AGAINST BREAST
CANCER (MCF-7)**

Submitted for
Partial Fulfillment of the Requirement for the Award of Degree of

**Master of Pharmacy
(Pharmaceutical Chemistry)**



Session 2021-2022

Submitted by

Miss REKHA SINGH

Enroll. : GGV/20/06337

Roll No. 20703009

M.Pharmacy 4th sem

Supervised by

Dr. JAGADISH SINGH

M. Pharm. P^hD.

Assistant Professor

(Pharmaceutical chemistry)

DEPARTMENT OF PHARMACY

GURU GHASIDAS VISHWAVIDYALAYA (A Central University)

BILASPUR (C.G.) 495009



DEPARTMENT OF PHARMACY
GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)

Tei. No. 07752-260027

Fax No. 07752-260148

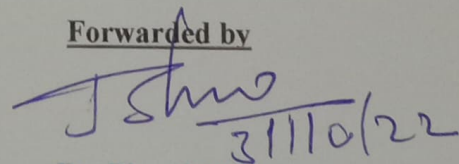
FORWARDING CERTIFICATE

This is to certify that **Miss REKHA SINGH** D/o **Shri Prabhat Kumar Singh** student of M. Pharmacy 4th semester has submitted her project entitled "**Synthesis, Characterization and Evaluation of anticancer activity of 1,3,4- Oxadiazole derivatives against breast cancer (mcf-7)**" for the partial fulfillment of the requirement for the Degree of **Master of Pharmacy (Pharmaceutical Chemistry)** at Department of Pharmacy, GGV Bilaspur (C.G.). She has completed her project under the supervision of **Dr. JAGADISH SINGH** (Asst. Prof.). Her work is Satisfactory for the award of degree of **Master of Pharmacy**

I hereby forward her project work in M. Pharm. (Pharmaceutical Chemistry) during the academic session 2021-2022

Date:- 31/10/2022

Forwarded by


31/10/22

Dr. Bharti Ahirwar

Associate Professor and Head of Department

Department of pharmacy

G.G.V. Bilaspur (C.G.)

Head

Department of Pharmacy
Guru Ghasidas Vishwavidyalaya
(A Central University)
Bilaspur (C.G.)



DEPARTMENT OF PHARMACY

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)

Tel. No. 07752-260027

Fax No. 07752-260148

CERTIFICATE

This is to certify that **Miss REKHA SINGH** D/o **Shri Prabhat Kumar Singh** student of M. Pharmacy 4th Semester, department of pharmacy has submitted her project entitled "Synthesis, Characterization and Evaluation of Anticancer Activity of 1,3,4- Oxadiazole Derivatives Against Breast Cancer (MCF-7)" for the partial fulfillment of the requirement for the Degree of **Master of Pharmacy (Pharmaceutical Chemistry)**. She has completed her project under the supervision of **Dr. JAGADISH SINGH** (Asst. Prof.). Her work is Original, Satisfactory and is not submitted anywhere else for the award of any degree.

I hereby recommend her project work in M. Pharm. (Pharmaceutical Chemistry) during the academic session 2021-2022.

Date:- 31-10-2022

Supervised By

Dr. JAGADISH SINGH

Asst. Prof. (Pharm. Chem.)

Department of Pharmacy

G.G.V. Bilaspur (C.G.)



DEPARTMENT OF PHARMACY

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)

Tel. No. 07752-260027

Fax No. 07752-260148

DECLARATION

I hereby declare that the project entitled "Synthesis, Characterization and Evaluation of Anticancer Activity of 1,3,4- Oxadiazole Derivatives Against Breast Cancer (MCF-7)" was done by me. The entire work was done with the guidance and suggestion received from my supervisor **Dr. JAGADISH SINGH** (Asst. Prof.) at Department of Pharmacy, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.). The same is submitted to Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) for the partial fulfillment of the requirement for the Degree of Master of Pharmacy (Pharmaceutical Chemistry).

I further declare that I have not submitted this Thesis previously for award of any degree or diploma anywhere else.

Date:- 31-10-2022

Rekha Singh

Miss REKHA SINGH

M. Pharm. 4th semester

Enrollment no. GGV/20/06337

ACKNOWLEDGEMENT

First of all thanks to the Supreme Power of the Almighty god for the showers of blessing throughout my research work to complete the research successfully.

It is a great pleasure to acknowledge my deepest thanks and gratitude to everyone who supported me throughout the course of thesis work. I wish to extend my sincere and heartfelt obligation to work all the personages who have helped me in this endeavor. Without their active guidance, help, cooperation and encouragement, I would not have made any progress in my project.

I would like to express my special thanks to my guide **Dr. Jagadish Singh, Assistant Prof. (Pharmaceutical Chemistry)** Department of Pharmacy, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) for his supervision, guidance and support from the total duration of this research as well as giving me the golden opportunity to do this wonderful project throughout the work which also helped me in doing a lot of research and I came to know about so many new things. Thank you sir, you made me believe in me, I am indebted to you for giving me the time, space and suggestions for making me to complete my project within time.

I also thank my cooperative Asst. Prof. **Dr. Partha Partim Roy** and my seniors **Balaji Wamanrao Matore, Purusottam Banjare, Anjali Murmu**, who supported me throughout my academic project. I would also like to thank my friends **Nisha Lakra, Nidhi Aggrawal** who encouraged me and finally to finishing this project.

I am also thankful to **Dr. Bharti Ahirwar (Head of Pharmacy Department) Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)** for providing me the required facilities and also their timely words of advice, despite of their busy schedule.

I am also thankful to, **Dr. S.K. Jain, Dr. D.K Pal, Dr. K.P. Namdeo, Dr. H.Rajak, Dr. S.K. Bharti, and Mrs. M. Jaiswal** for their constant efforts and support throughout my project work and post graduation as well.

My deepest gratitude goes to my family who stood with me at all the time and whose support enabled me to stand confidently against all difficult time. My Father **Shri. Prabhat Kumar Singh**, Mother **Mrs. Renu Singh**, Brother **Pashupati Nath Singh**, sister **Rashmi Singh**, family friends **Amritesh Nandan, Anjali Rani, Richa Kumari** and all my relatives & well wishers for always being supportive and I am thankful for the prayers they prayed for me. I am grateful towards all the efforts he made me to complete my work, my mentor **Dr. Jagadish Singh, (GGV Bilaspur)** for his blessings always with me.

My Sincere thanks to all...!!

REKHA SINGH

CONTENTS

S.NO.	CHAPTER NO.	TITLE	PAGE NO.
1	1	INTRODUCTION	1-31
2	2	LITERATURE REVIEW	32-45
3	3	AIM AND OBJECTIVES	46
4	4	PLAN OF WORK	47-48
5	5	EXPERIMENTAL WORK	49-79
6	6	RESULTS AND DISCUSSION	80-104
7	7	CONCLUSION	105-106
8	8	REFERENCES	107-112
9		LIST OF CHEMICALS AND SOLVENTS	
10		IMAGES CLICKED DURING EXPERIMENT	
11		CERTIFICATES	