

**EFFECT OF Fe_3O_4 FUNCTIONALIZED NANO PARTICLES ON CD146+ BREAST
CANCER STEM CELLS WITH RESPECT TO E-CADHERIN AND N-CADHERIN
EXPRESSION.**

THROUGH

MAHATMA GANDHI MISSION'S SCHOOL OF BIOMEDICAL SCIENCES,

NAVI MUMBAI

DISSERTATION SUBMITTED TO



MGM INSTITUTE OF HEALTH SCIENCES

(DEEMED UNIVERSITY)

IN THE PARTIAL FULFILMENT OF REGULATIONS

FOR THE AWARD OF THE DEGREE OF

MASTER OF SCIENCE

IN

MEDICAL GENETICS

2021-22

**EFFECT OF FE₃O₄ FUNCTIONALIZED NANO PARTICLES ON CD146+
BREAST CANCER STEMCELLS WITH RESPECT TO E-CADHERIN AND N-
CADHERIN EXPRESSION.**

BY

Gunjan Baldeo Chavhan
UNDER THE GUIDANCE OF

Dr. Himanshu Gupta
Assistant Professor
Department of Medical Biotechnology

CO-GUIDED BY

Dr. Nishant Vyas
Lab of cellular Immunology, Research Head
Logical Life Sciences Pvt. Ltd, Pune

THROUGH

**MAHATMA GANDHI MISSION'S SCHOOL OF BIOMEDICAL SCIENCES, NAVI
MUMBAI**



DISSERTATION SUBMITTED TO

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KAMOTHE, NAVI MUMBAI

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IN

MEDICAL GENETICS

2021-22

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CADHERIN EXPRESSION.”**

IS A BONAFIDE RESEARCH WORK DONE BY

GUNJAN BALDEO CHAVHAN

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MASTER OF SCIENCE IN MEDICAL GENETICS COURSE.

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This is to certify that the dissertation ENTITLED "EFFECT OF FE_3O_4 FUNCTIONALIZED NANO PARTICLES ON CD146+ BREAST CANCER STEM CELLS WITH RESPECT TO E-CADHERIN AND N-CADHERIN EXPRESSION." is a bonafide work by **Ms. Gunjan Baldeo Chavhan** under the supervision and guidance of **Dr. HIMANSHU GUPTA** as partial fulfillment of regulation for the award of the degree of **M.Sc. in Medical Genetics**.

We have great pleasure in forwarding it to **MGM Institute of Health Sciences, Kamothe, Navi Mumbai**

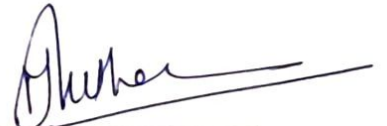
Date: 30/06/2022

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DECLARATION

I HEREBY DECLARE THAT THE DISSERTATION ENTITLED
"EFFECT OF Fe_3O_4 FUNCTIONALIZED NANO PARTICLES ON CD146+ BREAST
CANCER STEM CELLS WITH RESPECT TO E-CADHERIN AND N-CADHERIN
EXPRESSION."

HAS BEEN PREPARED BY ME

UNDER DIRECT GUIDANCE AND SUPERVISION OF

DR. HIMANSHU GUPTA

IN PARTIAL FULFILMENT OF REGULATIONS FOR THE AWARD OF THE DEGREE

OF

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M.Sc Medical Genetics

CERTIFICATE

This is to certify that the dissertation entitled "**EFFECT OF Fe_3O_4 FUNCTIONALIZED NANO PARTICLES ON CD146+ BREAST CANCER STEM CELLS WITH RESPECT TO E-CADHERIN AND N-CADHERIN EXPRESSION.**" has been prepared by **MS. GUNJAN BALDEO CHAVHAN** under my direct supervision and guidance in partial fulfillment of the regulation for the award of the degree of **M.Sc. in Medical Genetics**.

Her work on the subject has been checked by me from time to time. I am satisfied with the authenticity of his observations, clinical material, and experimentation in this dissertation and it conforms to the standards of, MGM INSTITUTE OF HEALTH SCIENCES, (DEEMED UNIVERSITY) KAMOTHE, NAVI MUMBAI.

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Himanshu Rajat Gupta

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**Effect of Allicin on Cell Death of CD44+ Cancer Stem Cells
from Oral Cancer Cell line AW13516**

BY

UNDER THE GUIDANCE OF

DR. HIMANSHU GUPTA

ASSISTANT PROFESSOR

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CO-GUIDED BY

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IN THE PARTIAL FULFILMENT OF REGULATIONS FOR THE AWARD OF THE
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MASTER OF SCIENCE

IN

MEDICAL GENETICS (2021-2022)

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**Effect of Allicin on Cell Death of CD44+ Cancer Stem Cells from Oral Cancer Cell
line AW13516**

IS A BONAFIED RESEARCH WORK DONE BY

Mr. Aher Rushikesh Bhagwan

UNDER MY DIRECT SUPERVISION AND GUIDANCE IN PARTIAL FULFILMENT
OF
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HIS WORK ON THE SUBJECT HAS BEEN CHECKED BY ME FROM TIME TO
TIME.

I AM SATISFIED REGARDING THE AUTHENTICITY OF **HIS** OBSERVATIONS,
CLINICAL MATERIAL AND EXPERIMENTATION IN THIS DISSERTATION AND
IT

CONFORMS TO THE STANDARDS OF, **MGM INSTITUTE OF HEALTH
SCIENCES,
NAVI MUMBAI.**

I HAVE GREAT PLEASURE IN FORWARDING IT TO **MGM INSTITUTE OF
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This is to certify that the dissertation entitled "Effect of Allicin on cell death of CD44+ cancer stem cells from oral cancer cell line AW13516" is a bonafide work by **Mr. Aher Rushikesh Bhagwan** under the supervision and guidance of **Dr. Himanshu Gupta** as a partial fulfilment of regulation for the award of the degree of **M.Sc. in Medical Genetics**.

We have great pleasure in forwarding it to **MGM Institute of Health Sciences, Kamothe, Navi Mumbai.**

Date: 30/06/2022

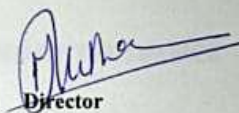
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DECLARATION

I HEREBY DECLARE THAT THE DISSERTATION ENTITLED
**EFFECT OF ALLICIN ON CELL DEATH OF CD44+ CANCER STEM CELLS FROM
ORAL CANCER CELL LINE AW13516**

HAS BEEN PREPARED BY ME

UNDER DIRECT GUIDANCE AND SUPERVISION OF

DR. HIMANSHU GUPTA

IN PARTIAL FULFILMENT OF REGULATIONS FOR THE AWARD OF THE DEGREE

OF

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Date: 30/06/2022

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