### DIE EIDGENÖSSISCHE TECHNISCHE HOCHSCHULE ZÜRICH





Eidgenössische Technische Hochschule Zürich Swiss Federal Institute of Technology Zurich verleiht

### Palni Kundra

Master of Science, McGill University geboren am 30. November 1991

den Titel

#### **DOKTORIN DER WISSENSCHAFTEN**

aufgrund der Doktorarbeit

THE EFFECT OF EXOGENOUS AND ENDOGENOUS VITAMIN B9 AND B12 ON MICROBIAL GROWTH AND METABOLISM IN THE HUMAN GUT

Leiter der Doktorarbeit: Prof. em. Dr. Christophe Lacroix

und der mündlichen Prüfung vom 21. Juni 2023

Zürich, 27. November 2023

Der Rektor

Die Vorsteherin des Departements Gesundheitswissenschaften und Technologie

of Dinamy

Prof. Dr. Günther Dissertori Prof. Dr. Laura Nyström



# McGILL UNIVERSITY MONTREAL

TO ALL TO WHOM THESE PRESENTS MAY COME, GREETING: WE, THE GOVERNORS, PRINCIPAL, AND FELLOWS OF McGILL UNIVERSITY TESTIFY THAT

## Palni Kundra

HAVING DILIGENTLY COMPLETED THE REQUIRED COURSE OF STUDY AND PERFORMED
THE PRESCRIBED EXERCISES HAS BEEN ADMITTED TO THE DEGREE OF

### MASTER OF SCIENCE

WITH ALL THE HONOURS, PRIVILEGES, AND PREROGATIVES PERTAINING TO THAT DEGREE, IN WITNESS WHEREOF WE HAVE AFFIXED OUR SIGNATURES AND HAVE CAUSED THE SEAL OF THE UNIVERSITY TO BE ATTACHED HERETO. GIVEN IN CONVOCATION THIS 6TH DAY OF JUNE IN THE YEAR 2018.

Malbautogla

REGISTRAR



Ridaul A. Divon

Suzanu Patier

CHANCELLOR

PRINCIPAL



## गुंग हों हवे दें प्रतिस्वमिर्ट





## ਬੈਚੂਲਰ ਆਫ ਫੂਡ ਸਾਇੰਸ ਐਂਡ ਟੈਕਨੌਲੌਜੀ (ਆਨਰਜ਼)

92015036408

ਰਜਿਸਟਰਡ ਨੰ: 2011.ਜੇ/ਏ.37

Regd. No. : 2011, J/A.37

ਤੋਂ ਨਿਸ਼ਚਿਤ ਕੋਰਸ ਦਾ ਅਧਿਐਨ ਕਰਨ ਉਪਰੰਤ

ਅਤੇ ਸ਼ੀਮਤੀ

ਪਮਾਣਿਤ ਕੀਤਾ ਜਾਂਦਾ ਹੈ ਕਿ

ਦਿਵਿਆ ਕੰਦਰਾ

ਪਲਨੀ ਕੁੰਦਰਾ

ਅਪੈਲ, 2015

ਵਿਚ ਹੋਈ ਲੋੜੀਂਦੀ ਪ੍ਰੀਖਿਆ

ਦੀ ਡਿਗਰੀ ਪ੍ਰਾਪਤ ਕੀਤੀ ਹੈ ।

ਕਿਰਨ ਕਿਸ਼ੋਰ ਕੁੰਦਰਾ

ਪੱਤਰ/ਪੁੱਤਰੀ ਸ਼੍ਰੀ ਡੀ.ਏ.ਵੀ.ਕਾਲਜ, ਜਲੰਧਰ

ਪਹਿਲੀ (ਵਿਸ਼ੇਸ਼ਤਾ ਸਹਿਤ)

ਡਿਵੀਜ਼ਨ ਵਿਚ ਪਾਸ ਕਰਕੇ

### ਬੈਚੂਲਰ ਆਫ ਫੂਡ ਸਾਇੰਸ ਐਂਡ ਟੈਕਨੌਲੋਜੀ (ਆਨਰਜ਼) Guru Nanak Dev University?

	BACHELOR O	F JOOD SCIERCE PALNI KUNDRA	& TECHAPLOSE son/daughter of Mr.	KIRAN KISHORE KUNDRA
and Mrs.	DIVYA KUNDRA	· · · · · · · · · · · · · · · · · · ·	D. A. V. COLLEGE, JALANI	OHAR
			APRIL, 2015	has been admitted to the Degree of
BACHELO	OR OF FOOD SCIENCE & TEC	HNOLOGY (HONOURS) and been	placed in First	Division (with Distinction).
		ਯੂਨੀਵਰਸਿਟੀ ਸੀਲ ਅਧੀਨ ਪ੍ਰਮਾਣਿਤ ਕੀ		
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ਪੋਫੈਸਰ ਇੰਚਾਰਜ (ਪ੍ਰੀਖਿਆਵਾਂ) Professor Incharge (Exams.)

June 17, 2015 ਅੰਮ੍ਰਿਤਸਰ Amritsar

Registrar

Vice-Chancellor

Chancellor



Eidgenössische Technische Hochschule Zürich Swiss Federal Institute of Technology Zurich Institute of Food, Nutrition and Health Department of Health Sciences and Technology

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Zurich, 20 July 2023 LC

#### Letter of reference

Palni Kundra, born on November 30, 1991 and a citizen of Indien, was 100.00 % employed by ETH Zurich as doctoral student from September 1, 2018 until June 30, 2023. About 30,000 people from more than 120 countries study, carry out research and work at ETH Zurich.

Ms Palni Kundra's duties and responsibilities in this capacity primarily comprised:

- working on her own thesis in the specialist field of Food Biotechnology on the subject of modulation effects of B-vitamins on the human gut microbiota
- publishing her research results in the form of papers, conference papers, articles for books
- publishing her research results in the form of papers in recognised specialist journals
- presenting papers at academic conferences
- supervising students writing semester papers and/or Master theses
- guiding Bachelor students during exercise and practical sessions
- supervising Master students during practical work in the laboratory/institute/field

Palni Kundra possessed proven expertise and extensive experience in her area of responsibility. She successfully applied herself to new duties and used the acquired knowledge with good results. The effort she put into her work was in proportion to the achieved outcome, and she met the requirements. With her rational and precise approach to her work, she always delivered a good performance. Her good command of languages was of great value for the communication in her work environment.

Palni Kundra showed initiative and complete commitment. Under challenging conditions, she remained calm and assured, adapting to changing circumstances with ease. Perceptive in evaluating the scope and impact of her actions, she was careful when weighing up the related risks and opportunities. In the decision-making process she exercised autonomy blended with a great deal of expertise. When arranging the deployment of staff, she was good at doing so according to need and objective. It was important to her to align her outlook and her actions with the goals of Food Biotechnology.

#### Letter of reference

Palni Kundra immediately conveyed key information to the relevant recipients, and chose the appropriate moment to involve management when the situation demanded it. In terms of verbal and writing skills, she displayed tremendous adroitness when tailoring her communications to her addressees. Moreover, she was adept at presenting her own ideas in a convincing manner. She took on board other opinions and constructive criticism; she listened to what was said and was tuned in to the needs of her conversational partners. She supported and encouraged collaboration within the team and was highly adept at reconciling differing views. Management, staff and students alike appreciated her greatly and held her in high esteem.

Palni Kundra left us on expiry of her fixed-term employment contract. We thank her for her contribution and wish her every success going forward.

Christophe Lacroix

CLacroix

Cynthia Kümin

#### **List of Referees:**

• Prof. em. Dr. Ing. Christophe Lacroix (PhD thesis Supervisor and Thesis committee)

Full professor and group leader at Food Biotechnology group Department of Health Science and Technology ETH Zurich

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• Dr. Annelies Geirnaert (Co-supervisor and Thesis Committee)

Senior Scientist at Food Biotechnology group Department of Health Science and Technology ETH Zurich

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• Dr. Anna Greppi (Co-supervisor and Thesis Committee)

Senior Scientist at Food Systems Biotechnology Department of Health Science and Technology ETH Zurich

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