

Resume

Prem Prashant Chaudhary, Ph.D

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Date of Birth: 26th June, 1983

Current Position

- Working as Postdoctoral Researcher at Department of Periodontology at The Ohio State University in the area of Oral Microbiome studies from 11th October, 2019 - till date.

Research Experience

- Worked as Senior Research Fellow at NAFTEC situated at School of Chemical and Biomedical Engineering at Nanyang Technological University in the area of Gut Microbiome studies from 20th March, 2017- 30th June, 2019.
- Worked as Research Fellow at School of Medicine, Department of Internal Medicine and Infectious diseases (Centre for Microbial Systems) at University of Michigan, Ann Arbor from 16th May, 2016 - 15th March, 2017 (Worked on Michigan Microbiome Project)
- Worked as Postdoctoral Fellow at School of Medicine, Université d'Auvergne, Clermont-Ferrand, France from 1st September, 2014 - 14th May, 2016 (Worked there on gut methanogens isolation and diversity analysis)
- Worked as Postdoctoral Fellow at Palacký University, Olomouc, Czech Republic (also spent 3 months as Visiting Researcher at Max Planck Institute for Terrestrial Microbiology from 2nd May 2014 to 29th July 2014 during this assignment) (Total duration of postdoctoral position is from 27th May 2013 - 27th September 2014).
- Worked as Research Associate at Biowits Life Sciences, Yamuna Nagar, Haryana from 1st October 2012 - 26th May 2013.
- Worked as Postdoctoral Fellow at Institute of Human Virology, School of Medicine, University of Maryland, Baltimore, USA (From 29, May 2012 - 29, September 2012).
- Worked as Senior Research Fellow at National Dairy Research Institute, Karnal, Haryana, India in the project entitled "Rumen microbial manipulations for the mitigation of methane emission and productivity enhancement in dairy animals." (From 12th June, 2007 - 31st January, 2012).

Projects sanctioned from National Funding agency

- Co –Principal Investigator in project entitled “Mutation screening and association analysis of PC -1 and IRS-1 gene in type II diabetic patients from Northern India” sanctioned by University Grant Commission as major project for 3 years.
Total Cost - 9, 49,300 Rupees

Publications

1. Bednařík, A, Blaser,M, Matoušů, A, Tušer,M, **Chaudhary, P.P** , Šimek,K and Rulík M (2019) Sediment methane dynamics along the Elbe River. Limnologica. <https://doi.org/10.1016/j.limno.2019.125716> (Impact Factor- 2.05)
2. **Chaudhary, P.P** , Conway, P. L and Schlundt, J (2018) Methanogens in humans: potentially beneficial or harmful for health. Applied Microbiology and Biotechnology 102(7):3095-3104. ^{PubMed} (Impact Factor- 3.6)
3. **Chaudhary, P.P** and Schlundt, J (2017) Exercise and Gut Microbiome. Journal of Molecular Biology. 1(1):7
4. Gaci, N, Flemer, B, Borrel, G, Sanderson, I.R, **Chaudhary, P.P**, Tottey,W, O'Toole,P.W and Brugère,J.F (2017) Faecal microbiota variation across the lifespan of the healthy laboratory rat. Gut Microbes. 3; 8(5):428-439.
5. Gaci,N, **Chaudhary, P.P**, Tottey,W, Alric, M and Brugère,J.F (2017) Functional amplification and preservation of human gut microbiota. Microbial ecology of Health and Disease. 28 (1), 1308070.
6. **Chaudhary, P.P**, Rulík, M and Blaser, M (2017) Is the methanogenic community reflecting the methane emissions of river sediments? – Comparison of two study sites. MicrobiologyOpen. doi: 10.1002/mbo3.454. ^{PubMed} (Impact Factor- 2.74)
7. **Chaudhary, P.P**, Goel, N, Baker, G, Saxena, J, Singh, N, Chaturvedi, I, Sharma, A and Sirohi, S.K (2016) Influence of essential oils supplementation on rumen fermentation profile and ruminal microbial population *in vitro*. Journal of Science 1 (4): 25-34
8. Chaturvedi, I, Sinha, S and **Chaudhary, P.P** (2016) A molecular docking study to understand the interaction between anti-Cancerous compounds and 12bp DNA sequences: poly (dA-dT) 12 and poly (dG-dC) 12. Journal of Science 1 (4): 19-24
9. **Chaudhary, P.P**, Gaci,N, Borrel, G, O'Toole,P.W and Brugère,J.F (2015) Molecular methods for studying methanogens of the human gastro-intestinal tract: Current status and future directions. Applied Microbiology and Biotechnology 99(14):5801-15. ^{PubMed} (Impact Factor- 3.81)

10. Mach,V, Blaser,M, Claus,P, **Chaudhary, P.P** and Rulík, M (2015) Methane production potentials, pathways, and communities of methanogens in vertical sediment profiles of river Sitka. *Frontiers in Microbiology* 6:506. [PubMed](#) (Impact Factor- 4.0)
11. Rulík, M and **Chaudhary, P.P** (2015) Magnetotactic bacteria evidenced by molecular cloning and sequencing of 16S rRNA genes in selected freshwater sediments from the Czech Republic. *Brazilian Journal of Microbiology*. 45(4):1255-61. [PubMed](#) (Impact Factor- 0.45)
12. Brablcová, L, Buriánková, Badurová,P, **Chaudhary, P.P**, Rulík, M (2015) Methanogenic archaea diversity in hyporheic sediments of a small lowland stream. *Anaerobe* 32:24-31. [PubMed](#) (Impact Factor- 2.36)
13. **Chaudhary, P.P**, Wright, A.D.G, Brablcová, L, Buriánková, I, Bednařík, A, and Rulík, M(2014) Dominance of Methanosarcinales phylotypes and shifts in the distribution of methanogen community structure with depth in fresh water sediments of Sitka stream in Czech Republic. *Current Microbiology* 69(6):809-16. [PubMed](#) (Impact Factor- 1.35)
14. Buriánková,I, Brablcová,L, Mach,V, Dvořák ,P , **Chaudhary, P.P** and Rulík, M (2013) Identification of methanogenic archaea in the hyporheic sediment of Sitka stream. *PLOS One* 8(11): e80804. [PubMed](#) (Impact Factor- 3.53)
15. **Chaudhary, P.P**, Brablcová, L, Buriánková, I and Rulík, M (2013) Molecular diversity and tools for deciphering the methanogen community structure and diversity in freshwater sediments. *Applied Microbiology and Biotechnology*.97: 7553-7562. [PubMed](#) (Impact Factor- 3.81)
16. Sirohi, S.K, Dagar, S.S, Singh, N, **Chaudhary, P.P**, Puniya, A.K and Singh, D (2013) Differential rumen microbial dynamics and fermentation parameters in cattle fed high fibre and high concentrate diet. *Indian Journal of Animal Nutrition*. 30 (1) : 60-66
17. Sirohi, S.K, **Chaudhary, P.P**, Singh, N, Singh, D and Puniya, A.K (2013) The 16S rRNA and mcrA gene based comparative diversity of methanogens in cattle fed on high fibre based diet. *Gene*. 523(2):161-166. [PubMed](#) (Impact Factor- 2.08)
18. Sharma, A*, Subbias, K.K, \$ Robine, O, \$ Chaturvedi, I, \$ Nigam, A,\$ Sharma, N and **Chaudhary, P.P**\$ (2012) Computational finding of potential inhibitor for Cytochrome P450 Mono-oxygenases Enzyme of Mycobacterium tuberculosis.*Bioinformation*.8(19):931-935. [PubMed](#) \$-Authors contributed equally(Impact Factor- 1.4)
19. **Chaudhary, P.P**, Dagar,S.S and Sirohi,S.K (2012) Comparative quantification of major rumen microbial population in Indian Cattle and Buffalo fed on wheat straws based diet. *Prime Journal of Microbiology Research*; 2(2) 105–108.

20. Sirohi,S.K, **Chaudhary, P.P** and Goel,N (2012) Effect of inclusion of *Myristica fragrans* on methane production, rumen fermentation parameters and methanogens population . *Veterinary World*; 5(4)335-340. (Impact Factor- 0.89)
21. Goel,N, Sirohi,S.K, Dwivedi,J and **Chaudhary P.P** (2011) Efficacy of different plant part combinations as rumen fermentation modulator in wheat straw based diet evaluated in vitro. *Annals of Biological Research*; 2 (6) : 91-96.
22. **Chaudhary, P.P**, Sirohi,S.K and Saxena,J (2012) Diversity analysis of methanogens in rumen of *Bubalus bubalis* by 16S riboprinting and sequence analysis.*Gene*;493 13–17. [PubMed](#) (Impact Factor- 2.08)
23. **Chaudhary, P.P**, Sirohi,S.K,Singh,D and Saxena,J (2011) Methyl Coenzyme M Reductase (mcrA) gene based phylogenetic analysis of methanogens population in Murrah Buffaloes (*Bubalus bubalis*). *The Journal of Microbiology*;49(4):558-61. [PubMed](#) (Impact Factor- 1.52)
24. Sharma, A, **Chaudhary, P.P**, Sirohi,S.K and Saxena J (2011) Structure modeling and inhibitor prediction of NADP oxidoreductase enzyme from *Methanobrevibacter smithii*. *Bioinformation*; 6(1): 15-19. [PubMed](#) (Impact Factor- 1.4)
25. **Chaudhary, P.P**, Sirohi,S.K and Kumar S (2011) Improved extraction of quality DNA from methanogenic archaea present in rumen liquor for PCR application. *Asian Journal of Animal Sciences*.5 (3)166-174.
26. Sirohi,S.K, Pandey, N, Goel,N, Singh,B, Mohini, M , Pandey,P and **Chaudhary P.P** (2009) Microbial Activity and Ruminal methanogenesis as affected by Plant Secondary Metabolites in Different Plant Extracts. *International Journal of Environmental Science and Engineering* (1) 52-58
27. **Chaudhary, P.P** and Sirohi,S.K (2009) Dominance of *Methanomicrobium* phylotype in rumen (*Bubalus bubalis*) methanogens from India. *Letters in Applied Microbiology*. 49(2):274-277. [PubMed](#) (Impact Factor- 1.74)
28. **Chaudhary, P.P**. (2009) *Methanomicrobium* phylotype are the dominant methanogen phylotype in the Murrah buffaloes. *Letters in Applied Microbiology*. 48(3) 386. [PubMed](#) (Impact Factor- 1.74)
29. **Chaudhary, P.P** and Bhardwaj KR (2007) Antimicrobial activity of different antibiotics against *Streptococcus pyogenes*. *Eco Research Journal of Biosciences* 6, 62-65.

Poster presentations

- Gaci,N, Borrel, G,Totey,W, **Chaudhary ,P.P**, O'Toole,P.W and Brugère,J.F (2015) Methanol as a substrate for methanogenesis of the principal human gut archaeal commensal *Methanobrevibacter smithii*.gdr-archaea 2015:journées scientifiques GDR Archaea 2015. Toulouse. France (March 12th-13th ,2015)

- Gaci,N,Tottey,W, **Chaudhary ,P.P**, Borrel,G, O'Toole,P.W and Brugère,J.F (2014)Evolution de la flore fécale des rats dans des conditions contrôlées de l'environnement et de l'alimentation Lifespan evolution of the fecal microbiota of rats under controlled environmental and diet conditions. 7 ème Journée Scientifique,Clermont-Ferrand, France (November 20,2014)
- Rulík, M, Matoušů, A, Tušer,M, **Chaudhary ,P.P**, Bednařík, A and Blaser, M(2014) Methane dynamics along the course of the River Elbe. Water resources and wetlands conference, Tulcea, Romania (September 11-13, 2014)
- Sirohi, S.K, **Chaudhary,P.P** and Saxena J (2011) Diversity analysis of methanogens in rumen of Bubalus bubalis by 16S riboprinting and sequence analysis.4thconference of European microbiologists FEMS 2011,Geneva,Switzerland (June 26-20,2011)

Abstracts/Conference Proceedings

- Dagar,S.S, Sirohi,S.K and **Chaudhary ,P.P** (2012) RT-PCR analysis of diet-dependent variation in rumen microbial populations in cattle. . In Proceedings of 8th Biennial Animal Nutrition Association Conference held at Rajasthan University of Veterinary and Animal Sciences, November 28-30, 2012, Bikaner, India, (Abstr: BAN-8, pp. 211)
- Goel,N, Pandey,P,Sirohi,S.K and **Chaudhary ,P.P**.(2009)Efficacy of different plant extract combinations as rumen fermentation modulator in wheat straw based diet evaluated *in vitro*.13th Biennial conference of Animal Nutrition Society of India held at Bangalore in between 17th December-19th December.
- Goel,N, Pandey,P,Sirohi,S.K and **Chaudhary ,P.P**.(2009)Efficacy of different herbal plant parts combinations as rumen fermentation modulator in wheat straw based diet evaluated *in vitro*.13th Biennial conference of Animal Nutrition Society of India held at Bangalore in between 17th December-19th December.
- Sirohi,S.K, Pandey,P, Goel,N and **Chaudhary ,P.P**.(2009)Supplementation effect of different organic acids and their sodium salts on rumen fermentation,digestibility and methane production in wheat straw based total mixed diet *in vitro*. 13th Biennial conference of Animal Nutrition Society of India held at Bangalore in between 17th December-19th December.
- Singh,B, Sirohi,S.K, **Chaudhary ,P.P**, Singh,D and Thube,H (2009)Diversity of Ruminant Methanogenic Archaea.Proceedings of Animal Nutrition Association World Conference held at New Delhi in between February 14th -17th.
- **Chaudhary, P.P**, Singh, D and Sirohi, S.K. (2008) Methanomicrobium Phylotypes are the Dominant Methanogens in Buffaloes (Bubalus bubalis) from India. 9th Biennial Congress of the anaerobe society of Americas held at Long Beach, CA USA in between June 24th - 27th.
- Sablok G, **Chaudhary, P.P** and Ghai, S (2008) Biocomputers: A lead ahead in Biocomputing.Biological Databases, Sequence and Phylogenetic analyses in Plant Sciences held at Department of Bioinformatics, Chaudhary Charan Singh Haryana Agriculture University in between 3rd -12th March.

- **Chaudhary, P.P,** Ghai, S, Rai, T.S and Khullar, M (2008) Mutation screening and association analysis cardiac myosin binding protein c gene in Hypertrophic Cardiomyopathy. Omics in the 21st century. P (10) held at Amritsar in between 17th -19th Feb.
- **Chaudhary, P.P,** Ojha, S.K, Ghai, S and Bhardwaj, K.R (2008) Antimicrobial activity of different antibiotics against *Streptococcus pyogenes*. National Conference held at Ghaziabad in between 18th -19th January

Book Chapters

- **Prem Prashant Chaudhary,** Sunil Kumar Sirohi and Haidar Ali Ahmed. Diversity and Geographical Distribution of Rumen Methanogens. Book: Livestock Greenhouse Gases: Emission and Options for Mitigation. Chapter-7. Page No.83-102
- Amit Bhattacharya, **Prem Prashant Chaudhary,** Sumit Singh Dagar, Prasanta Kumar Choudhary and Sunil Kumar Sirohi. Applications of Molecular Biology Techniques in the Study of Rumen Microbial Diversity. Book: Livestock Greenhouse Gases: Emission and Options for Mitigation. Chapter-29. Page No.393-415

Sequences submitted to NCBI Database

Accession Numbers received

EU330421, GU979792- GU979807, HM003379- HM003388, GU797091- GU797108, EU360960, EU360961, EU487513- EU487523, EU625230- EU625235, HQ450154- HQ450185, HQ616106-HQ616137, HQ634261- HQ634272, HQ640436- HQ640503, KF758468-KF758472, KF758474-KF758481, KM269746-KM269798

Awards

- Dean's award for the year 2013 for my publication Molecular diversity and tools for deciphering the methanogen community structure and diversity in freshwater sediments. Applied Microbiology and Biotechnology. 97: 7553-7562
- Best Oral Presentation award in a National Seminar Emerging Trends in Science and Technology held at Government P.G College, Karnal from 27th-28th February 2012

Teaching Experience

- Worked as lecturer in the Department of Biotechnology at Mukund Lal National College, Yamuna Nagar, Haryana in the session 2006-2007.

Academic achievements

- Selected as a Post graduate (Medical Biotechnology) student at Post Graduate Institute of Medical Education and Research on the basis of All India Entrance Examination.

- Selected as a Bachelor of Science student at Mukund Lal National College on the basis of All India merit.

Oral Presentation

- Isolement de *Methanomethylophilus alvus* gen. nov., sp. nov., archée méthanogène métabolisant le précurseur de l'agent plasmatique proathérogène TMAO. Journée Scientifique du CRNH Auvergne held in Clermont Ferrand, France on 26th November 2015
- Chronic inhibition of cGMP phosphodiesterase prevents and reverses cardiac hypertrophy (As a departmental presentation).

Academic Qualification

Degree	Institution/Board	Year of Passing
Ph.D Biotechnology	Banasthali University (Work Place:National Dairy Research Institute)	2012
Masters in Philosophy	Chaudhary Devi Lal University	2007
Masters in Medical Biotechnology	Post Graduate Institute of Medical Education and Research	2006
Bachelors in Life Sciences	Kurukshetra University, Kurukshetra	2004
Intermediate (12 th Class)	Central Board of Secondary Education	2001
Matric (10 th Class)	Central Board of Secondary Education	1999

PhD Thesis

Topic	Studies on diversity of ruminal methanogens and effect of methane inhibitors on methanogenesis and methanogens population in buffaloes <i>in vitro</i>
Institution	Banasthali University, Banasthali, Rajasthan, India
Guide	Jyoti Saxena, PhD, Professor, Dept of Biosciences and Biotechnology, Banasthali University, Banasthali, Rajasthan, India

M.Phil PROJECT

Topic	Isolation of Haemolytic microorganisms from human throat and check the effect of different antibiotics against them
Institution	Mukand Lal National College, Yamuna Nagar, Haryana-135001, India
Period	Six Months (December, 2006– May, 2007)
Guide	K.R Bhardwaj, PhD, Senior Lecturer, Dept of Botany, Mukand Lal National College, Yamuna Nagar, Haryana-135001, India

MASTER'S PROJECT

Topic	Mutation Screening And Association Analysis Of Cardiac Myosin Binding Protein C Gene In Hypertrophic Cardiomyopathy
Institution	Post Graduate Institute of Medical Education and Research, Chandigarh, India
Period	One-year (May, 2005– April, 2006)
Guide	Madhu Khullar, PhD, Professor, Dept of Experimental Medicine and Biotechnology, Post Graduate Institute of Medical Education and Research, Chandigarh

Research Trainings

- One month summer training(May 1st 2002-June 1st 2002) at Adlay Lab Limited, Derabassi,Punjab,India.
- One month summer training (May13th 2003-June12th 2002) at Haryana Distillery,Yamuna Nagar ,Haryana,India.

ONLINE CERTIFICATE COURSES

Machine Learning A-Z™ : Hands on Python and R in Data science by udemy.

TECHNIQUES KNOWN

DNA and RNA Isolation,Polymerase Chain Reaction, Anaerobic bacteria culturing, Real Time-PCR (Both absolute as well as relative), Gene Cloning, 16S and metagenomics data analysis, Fluorescence InSitu Hybridization, Plasmid Isolation,Single Stranded Conformation polymorphism, Poly Acrylamide Gel Electrophoresis, Agarose Gel Electrophoresis, Gel Extraction, Immunoprecipitation, Gas Chromatography (GC), Silver Staining, Tissue Culturing, Neutralization assays, FACS and ELISA.

COMPUTER SKILLS

I am well versed with various softwares used in NGS data (16S amplicon and shotgun metagenomics, metatranscriptomics and human transcriptome) analysis, Primer designing and Sequence analysis. Along with this I have handsome experience of working on various softwares viz. MEGA4, N-J Plot, Phylip , MS Office, Endnote, R Language (for basic statistical analysis), Sigma plot, Chemdraw, Adobe photoshop.

SUBJECTS STUDIED

During Master of Philosophy in Biotechnology

1. Reseach Methodology
2. Advanced Molecular Biology
- 3.Scientific Writing,Techniques and Project Management in Biotechnology
4. Advanced Bioprocess Technology

During Masters in Medical Biotechnology

1. Biochemistry
2. Immunology

3. Molecular Biology

4. Gene therapy

5. Microbial Genetics

During Bachelors in Life Sciences

1. Microbiology

2. Molecular Biology

3. Biochemistry

4. Environmental Biotechnology

5. Cell Biology

6. Chemistry

7. Genetics

8. Zoology

9. Biophysics

LABORATORY EXPERIENCE:

I have learned following techniques during my Bachelor's and Master's course.

Immunology: Chromatography (Gas, Thin Layer, Paper, Column, Affinity), Electrophoresis (PAGE, SDS-PAGE), Immunological techniques (ELISA, FACS, Immuno precipitation, Haemagglutination, Western Blotting, Lymphocyte Isolation and culture)

Molecular Biology: Protein isolation and purification, DNA and RNA isolation, DNA Purification, Polymerase Chain Reaction, Enzyme kinetics, Gene Cloning, Single Stranded Conformation Polymorphism, Poly Acrylamide Gel Electrophoresis, Plasmid Isolation, PCR purification.

Biochemistry: Carbohydrate, Lipid, Protein and Nucleic Acid Estimation, Enzyme isolation and characterization

(Prem Prashant Chaudhary)