

Curriculum vitae

1a. Personal details			
Full name	Dr Gunjan Goel		
Organisation	Central University of Haryana, Mahendergarh		
Contact	Department of Microbiology, CUH, Mahendergarh		
Telephone		Mobile	919882125930
Email:	gunjamicro@gmail.com ; ggoel@cuh.ac.in		
Date of Birth	10 Dec 1977		

1b. Academic qualifications

Aug 2002-April 2006 Ph.D. Microbiology, National Dairy Research Institute (NDRI), India

July 1998-June 2000 M.Sc. Microbiology (78.2%), Kurukshetra University, Kurukshetra,

Postdoctoral Training:

2006-2007 University of Hohenheim, Germany, Advisor: Prof Klaus Becker

2008-2010 University of Ghent, Belgium, Advisor: Prof Veerle Fievez

1c. Professional positions held

Aug,2018-till date Associate Professor, Central University of Haryana, Mahendergarh

2016-Aug,2018 Associate Professor, Jaypee University of Information Technology, Solan

2012-2016 Assistant Professor, Jaypee University of Information Technology, Solan

2010-2012 Assistant Professor, Maharishi Markandeshwar University, Mullana

2008-2010 Postdoctoral Scientist, University of Ghent, Belgium

2006-2007 Postdoctoral Fellow, University of Hohenheim, Germany

2002-2006 Senior Research Fellow, National Dairy Research Institute, Karnal (India)

2001-2002 Research Associate, National Dairy Research Institute, Karnal (India)

1d. Awards and Honours

2018: Best Poster Award, BIORESTEC 2018, 2nd International conference on Bioresource Technology for Bioenergy, Bioproducts & Environmental Sustainability Conference 16th to 19th Sep, 2018 Sitges, Spain

2018: Best paper award at Student Research Convention, JUIT, Wagnaghat, Feb 9-10, 2018 under BT-BI Track Evaluation of indigenous probiotic lactic acid bacteria to overcome gluten induced allergy

2017: Best oral Presentation, Advances in Food Science & Tech., Eternal University, (HP)

2014: Best Paper Award at 1st Himachal Pradesh Science Congress on Role of Science & Technology in Sustainable Development, HIMCOSTE, Shimla

2013: Research grant under Fast track scheme for Young Scientists, by DST, Govt of India

2012: Research grant under Rapid Grant for Young Investigator by DBT, Govt of India

2011: Travel grant from DST to attend FEMS 2011 at Geneva, Switzerland, 25-30 June, 2011

2009: Travel grant to attend XIth International Symposium on Ruminant Physiology, France - September 6-9, 2009 by FWO, National Fund for Scientific Research (Belgium)

1e. Total number of publications/patents	Journal articles	Book chapters	Conference Pro.	Citations/h-index
	63	11	50	1074, 15

2. Research Grants

National Projects (Completed)

PI: Microbial interventions for generating renewable bio-energy in Himachal Pradesh using Pine needle forest litter, HP State Council of Science, Technology and Environment, Himachal Pradesh (Ongoing)

PI: Development of a multi-compartment in vitro model of the human gastrointestinal tract, Department of Biotechnology, Govt of India (Completed)

PI: Novel quorum sensing modulators against biofilm forming *Cronobacter sakazakii*, Department of Science and Technology, Govt of India (Completed)

Co-PI: Probiotics to prevent infection of *Cronobacter sakazakii* in neonatal mouse model, Department of Biotechnology, Govt of India (Completed)

International Grants

PI: Elucidating the linkage between key limiting processes and microorganisms during anaerobic degradation of lignocellulosic waste, in collaboration with Dr Alla Nozhevnikova, INMI RAS, Moscow, Russia, (Completed)

Research Guidance

Postdoctoral fellow : 1 completed (under DST-RFBR grant), 1 (SERB-NPDF)

PhD awarded : 2 (completed), 2 (submitted)

UG and PG thesis : 19

PUBLICATIONS)

1. Jamwal A, Sharma K, Chauhan R, Bansal S., Goel G (2018) Evaluation of commercial probiotic lactic cultures against biofilm formation by *Cronobacter sakazakii*. *Intestinal Research* (<https://doi.org/10.5217/ir.2018.00106>)
2. Sharma D, Mahajan R, Goel G (2018) Direct interspecies electron transfer mechanisms for acceleration of anaerobic digestion of wastes. *International Journal of Environmental Science and Technology* (<https://doi.org/10.1007/s13762-018-2065-4>)

3. Sharma V, Attri S, Mahajan R, Goel G. (2018) Microbial profiling of Malera and Phab: Starters used for preparing traditional fermented foods and beverages in Himachal Pradesh, India. *Current Nutrition and Food Science* ([10.2174/1573401314666181016123558](https://doi.org/10.2174/1573401314666181016123558))
4. Singh M, Sharma D, Chauhan R, Goel G. (2018) Skimmed Milk-Based Encapsulation for Enhanced Stability and Viability of *Lactobacillus gastricus* BTM 7 Under Simulated Gastrointestinal Conditions. *Probiotics and Antimicrobial Proteins* (DOI: <https://doi.org/10.1007/s12602-018-9472-1>)
5. Sharma K, Attri S, **Goel G.** (2018) Selection and evaluation of probiotic and functional characteristics of autochthonous lactic acid bacteria isolated from fermented wheat flour dough 'babroo'. *Probiotics and Antimicrobial Proteins* (<https://doi.org/10.1007/s12602-018-9466-z>)
6. Attri S, Sharma K, Raigond P, **Goel G.** 2018. Colonic fermentation of polyphenolics from sea buckthorn (*Hippophae rhamnoides*) berries: Assessment of effects on microbial diversity by Principal Component Analysis. *Food Research International*, 105: 324-332
7. Attri S and **Goel G.** Influence of polyphenol rich seabuckthorn berries juice on release of polyphenols and colonic microbiota on exposure to simulated human digestion model, *Food Research International* 111: 314-323
8. Attri S, Mahajan R, Goel G. 2018. Development and diversity of Lactic acid bacteria and Bifidobacteria in healthy full term Indian infants from Himachal Pradesh. *Intestinal Research* 16: 529-536
9. Attri S, Nagpal R, Goel G. 2018. High throughput sequence profiling of gut microbiome in Northern Indian infants during the first four months and its global comparison. *Metagene* 17:184-191
10. Sharma K, Poornachitra M, Balamurugan K, **Goel G.** 2018. Multivariate analysis of increase in life span of *Caenorhabditis elegans* through intestinal colonization by indigenous probiotic strains. *Probiotics and Antimicrobial Proteins* (In press)
11. Choudhary S, Singh M, Sharma D, Attri S, Sharma K, **Goel G** 2018. Principal Component Analysis of stimulatory effect of synbiotic combination of indigenous probiotic and inulin on antioxidant activity of soymilk. *Probiotics and Antimicrobial Proteins* (In press)
12. Bhatnagar M, Attri S, Sharma K, **Goel G.** 2018. *Lactobacillus paracasei* CD4 as potential indigenous lactic cultures with antioxidative and ACE inhibitory activity in soymilk hydrolysate. *Journal of Food Measurement and Characterization*, 12: 1005-1010
13. Mahajan R, Attri S, Mehta V, Udaybanu M, and **Goel G.** 2018. Microbe-bio-chemical insight: Reviewing interactions between dietary polyphenols and gut microbiota. *Mini-Reviews in Medicinal Chemistry* 18: 253-1264
14. Singh N, Rokana N, Singh BP, Puniya AK, **Goel G,** Gulhane R, Sharma C, Attri S, Panwar H. 2018. Inhibitory effects of lactobacilli of goat's milk origin against growth and biofilm formation by pathogens: an in vitro study. *Food Bioscience*, 22: 129-138

15. Vashisht R, Attri S, Sharma D, Shukla A, **Goel G.** 2018. Monitoring biocalcification potential of *Lysinibacillus* sp. isolated from alluvial soils for improved compressive strength of concrete. *Microbiological Research*, 207: 226-231
16. Mahajan R., Attri S, Sharma K, Singh N, Sharma V, Sharma D, **Goel G.** 2018. Statistical assessment of DNA extraction methodology for culture-independent analysis of microbial community associated with diverse environmental samples. *Molecular Biology Reports* 45:297-308
17. Sharma, D., Sud, A., Mahajan R, Bansal S, Sharma BM, Chauhan, RS., **Goel G.** 2018. Endocellulase production by *Cotyledia pannosa* and its application in Saccharification of wheat bran to bioethanol. *Bioenergy Research*, 11: 219-227
18. Litti, Y. Nikitina, A., Kovalev D, Ermoshin M, Mahajan R. **Goel G.**, Nozhevnikova A. 2018. Influence of cationic Polyacrilamide Flocculant on high-solids anaerobic Digestion of Sewage Sludge under thermophilic condition. *Environmental Technology* (In press)
19. Mahajan, R. Nikitina, A., Litti, Y. Nozhevnikova A., **Goel, G.** 2018. Evaluating anaerobic and aerobic digestion strategies for degradation of pretreated pine needle litter. *International Journal of Environmental Science and Technology* (In press)
20. Singh N, Raghav M, Narula S, **Goel G.** 2017. Profiling of virulence determinants in *Cronobacter sakazakii* isolates from different plant and environmental commodities. *Current Microbiology* 74:560-565
21. Sharma K, Mahajan, R, Attri, S, **Goel G.** 2017. Selection of indigenous *Lactobacillus paracasei* CD4 and *Lactobacillus gastricus* BTM 7 as probiotic: assessment of traits combined with Principal Component analysis. *Journal of Applied Microbiology* 122:1310-1320
22. Attri S, Singh N, Singh TR and **Goel G.** 2017. Comparative evaluation of fruit juices from Himalayan belt of India as potential source of antioxidants: Effect of *in vitro* gastric and pancreatic digestion. *Food Bioscience* 17:1-6
23. Singh N., Patil A, Prabhune A, Raghav M, **Goel G.** 2017 Diverse profiles of N-acyl-homoserine lactones in biofilm forming isolates of *Cronobacter sakazakii* Virulence. 3: 275-281
24. Tiwari, S., Thakur, R., Goel G., Shankar J.2016. Nano-LC-Q-TOF Analysis of proteome revealed germination of *Aspergillus flavus* conidia is accompanied by MAPK Signalling and cell wall modulation. *Mycopathologia*, 181:769–786
25. Sharma D, Garlapati VK, **Goel G.** 2016. Bioprocessing of wheat bran for the production of lignocellulosic enzyme cocktail by *Cotyledia pannosa* under submerged conditions. *Bioengineered* 7: pp88-97
26. Singh N., Patil A, Prabhune A, Goel G. 2016 Quorum sensing mediated inhibition of biofilm formation in *Cronobacter sakazakii* isolates. *Microbiology*, 162: 1708-1714
27. Mahajan, R. Nikitina, A., Litti, Y. Nozhevnikova A., Goel, G. **2016.** Autochthonous microbial community associated with pine needle forest litterfall influences its degradation under natural environmental conditions. *Environment Monitoring and Assessment*. 188:417
28. Mahajan, R. Nikitina, A., Litti, Y. Nozhevnikova A., Goel, G. 2016. Microbial diversity in an anaerobic digester with biogeographical proximity to geothermal active region. *Environmental Technology*, 37:2694-2702
29. Jayanegara, A. **Goel, G.**, Makkar, HPS., Becker, K. (2015) Divergence between purified hydrolysable and condensed tannin effects on methane emission, rumen

- fermentation and microbial population *in vitro*. *Animal Feed Science and Technology*, 209: 660-668
30. Sharma, D., **Goel, G.**, Sud, A. and Chauhan, RS. (2015). A novel laccase from newly isolated *Cotylidia pannosa* and its application in decolorization of synthetic dyes. *Biocatalysis and Agricultural Biotechnology*. doi:10.1016/j.bcab.2015.07.008
 31. Singh, N., **Goel, G.** and Raghav, M. (2015). Prevalence and characterization of *Cronobacter* spp. from various foods, medicinal plants and environmental samples. *Current Microbiology*, 71(1), 31-38.
 32. Singh, N., **Goel, G.** and Raghav, M. (2015). An insight into putative virulence factors determining the pathogenicity of *Cronobacter sakazakii*. *Virulence*, 6(5), 433-440.
 33. Singh, N., **Goel, G.**, Singh, N., et al. (2015). Modeling the pigment production by *Monascus purpureus* MTCC 369 by Artificial Neural Network using rice water based medium. *Food Bioscience*, 11, 17-22.
 34. Beniwal, V., Sharma, A., Marwah, S., **Goel, G.** 2015. Use of chickpea (*Cicer arietinum* L.) milling agrowaste for the production of tannase using co-cultures of *Aspergillus awamori* MTCC 9299 and *Aspergillus heteromorphus* MTCC 8818. *Annals of Microbiology*, 65 (3), 1277-1286
 35. **Goel, G.**, Raghav, M., Beniwal, V. and Puniya AK. (2015). Anaerobic degradation of tannins in *Acacia nilotica* pods by *Enterococcus faecalis* in co-culture with ruminal microbiota. *Journal of General and Applied Microbiology*, 61(1), 31-33.
 36. **Goel, G.**, Raghav, M., Kaushik S. and Beniwal, V. (2014). Bioconversion of Vegetable and Agricultural Waste in Biogas using Cow Dung as Co-substrate. *Journal of Pure and Applied Microbiology*, 8(6), 4979-4982.
 37. Kallistova, A. Yu., Goel, G. and Nozhevnikova, AN. (2014). Diversity of microorganisms of methanogenic communities in systems treated anaerobic organic waste. A review. *Microbiology* 83, 462-483.
 38. Beniwal, V., Rajesh, Goel, G., Kumar, A., Chhokar, V. 2013. Production of tannase through solid state fermentation using Indian Rosewood (*Dalbergia Sissoo*) sawdust - a timber industry waste. *Annals of Microbiology*. 63: 583-590.
 39. Panyakeaw P, **Goel G.**, Lourence M, Tong C and Fievez, V. 2013. Medium-chain fatty acids from coconut or krabok oil inhibit *in vitro* rumen methanogenesis and conversion of non-conjugated dienoic biohydrogenation intermediates. *Animal Feed Science and Technology* DOI: 10.1016/j.anifeedsci.2012.12.005
 40. **Goel G.**, Makkar, H. P. S. 2012. Methane mitigation from Ruminants using Tannins and Saponins. *Tropical Animal health and production* 44:729-739
 41. Sandhu SS, Sharma AK, Beniwal V, **Goel G.**, et al. 2012. Myco-Biocontrol of Insect Pests: Factors Involved, Mechanism, and Regulation. *Journal of Pathogens*, 10 pages
 42. **Goel, G.**, Kumar, A., Beniwal V., Raghav, M., Puniya, A. K. and Singh, K. 2011. Degradation of tannic acid and purification and characterization of tannase from *Enterococcus faecalis*. *International Journal of Biodegradation and Biodeterioration*. 65: 1061-1065
 43. Hassim, H. Lourenceo, M., **Goel, G.**, Goh, Y. and Fievez, V. 2010. Effect of different inclusion levels of oil palm fronds on *in vitro* rumen fermentation pattern, fatty acid metabolism and apparent biohydrogenation of linoleic and linolenic acid. *Animal Feed Science and Technology*, 162: 155-158
 44. **Goel G.**, Makkar, H. P. S., and Becker, K. 2009. Inhibition of methanogens by bromochloromethane: effects on microbial community and rumen fermentation using batch and continuous fermentations *British Journal of Nutrition* 101: 1484-1492

45. **Goel G.**, Katarina A, Vlaeminck B, Fievez V. 2009. Capric acid concomitantly affects rumen methanogenesis and biohydrogenation of linoleic and linolenic acid. *Animal* 3: 810-816
46. **Goel G.**, Makkar, H. P. S., and Becker, K. 2008. Changes in microbial population, methanogenesis and rumen fermentation in response to saponin rich fractions of different plant materials. *Journal of Applied Microbiology* 105: 770-777
47. **Goel G.**, Makkar, H. P. S., and Becker, K. 2008. Effects of *Sesbania sesban* and *Carduus pycnocephalus* leaves and Fenugreek (*Trigonella foenum-graecum* L.) seeds and their extracts on partitioning of nutrients from roughage- and concentrate-based feeds to methane. *Animal Feed Science and Technology* 147: 72-89
48. **Goel, G.**, Puniya, A. K. and Singh, K. 2007. Phenotypic characterization of tannin-protein complex degrading bacteria from faeces of goat. *Small Ruminant Research* 69: 217-220
49. **Goel G.**, Makkar, H. P. S., and Becker, K. 2007. Microbial communities using real time PCR and fermentation parameters *in vitro* as affected by a natural and a synthetic anti-methanogenic agent. *Microbial Ecology in health and disease*. 19: 27
50. **Goel G.**, Makkar, H. P. S., and Becker, K. 2007. Phorbol esters: Structure, Biological activity and toxicity. *International Journal of Toxicology* 26: 279-288
51. Thareja, A., Puniya, A. K., **Goel, G.**, Nagpal, R., Singh, P., Sehgal J. P. and Singh, K. 2006. In-vitro degradation of wheat straw by anaerobic fungi from small ruminants. *Archives in Animal Nutrition*. 60: 412-417
52. **Goel, G.**, Puniya, A. K. and Singh, K. 2005. Tannic Acid Resistance in Ruminal Streptococcal Isolates. *Journal of Basic Microbiology*, 45: 243-245
53. **Goel, G.**, Puniya, A. K. and Singh, K. 2005. Xylanolytic activity of *Streptotococcus bovis* in presence of tannic acid. *Annals of Microbiology* 55: 297-300
54. **Goel, G.**, Kakkar, M., Puniya, A. K., Teotia, UVS and Singh, K. 2005. Microbiological and Chemical Quality Profiles of Kanji: A Naturally Fermented Product of Carrot. *Asian Journal of Biotechnology, Microbiology and Environmental Sciences*, 7: 815-817
55. **Goel, G.**, Kumar, A., Puniya, A. K., Chen, W. and Singh, K. 2005. Molecular Beacon: A multitask probe. *Journal of Applied Microbiology* 99: 435-442.
56. Kumar A, **Goel, G.**, Fehrenbach, E., Puniya A. K., Singh, K. 2005. Microarray: The Technology, analysis and application. *Engineering in Life Science* 3: 215-221
57. **Goel, G.**, Puniya, A. K., Aguliar, C. N. and Singh, K. 2005. Interaction of Gut Microflora with Tannins in Feeds. *Naturwissenschaften* 92: 497-503
58. **Goel, G.**, Mathur S., and Singh, R. 2004. Starter cultures in dairy industry- A review, *Indian Food Industry* 23: 45-49

Book Chapters

- Mahajan R. Chandel S, **Goel G.** (2018). A review on Implications of Interaction between Human Pathogenic Bacteria and Host on Food Quality and Disease. In Alexandru Grumezescu, Alina Maria Holban, *Food Safety and Preservation* (1st, pp. Chapter 15). Cambridge, Massachusetts, United States: Academic Press. [ISBN : 9780128149560]
- Singh N, Attri S, Sharma K, **Goel G** (2016) Indigenous Fermented Foods and Beverages. In *Frontiers in Food Biotechnology*. **Editors:** Chetan Sharma, Anil K. Sharma, and K.R. Aneja. Nova Science Publishers **ISBN:** 978-1-63484-679-0

- Bansal, S. and **Goel, G.** (2015). Commercial applications of rumen microbial enzymes. In Anil Kumar Puniya, Rameshwar Singh, Devki Nandan Kamra, *Rumen Microbiology: From Evolution to Revolution* : Springer . [ISBN : 9788132224006] pp. 281-292
- **Goel, G.**, Dagar, SS., Raghav, M. and Bansal, S. (2015). Rumen: an underutilized niche for industrially important enzymes.. In Anil Kumar Puniya, Rameshwar Singh, Devki Nandan Kamra, *Rumen Microbiology: From Evolution to Revolution* Germany: Springer . [ISBN : 9788132224006] pp. 247-264
- Saurabh Bansal, **Gunjan Goel**, Ojha S (2014). Industrial Enzyme Production. In Vikas Beniwal, Anil Kumar Sharma, *Industrial Enzymes: Trends, Scope and Relevance* . : Nova Publishers.. [ISBN : [ISBN : 978-1-63321-343-2] .
- Saurabh Bansal, **Gunjan Goel**, Swati Ojha (2014). Applications of Industrially Important Enzymes . In Vikas Beniwal, Anil Kumar Sharma, *Industrial Enzymes: Trends, Scope and Relevance* . USA: Nova Publishers. [ISBN : 978-1-63321-343-2
- Jayanagara, A., **Goel, G.** and Makkar H.P.S. 2010. Reduction in Methane Emissions from Ruminants by Plant Secondary Metabolites: Effects of Polyphenols and Saponins. Sustainable Improvement of Animal Production and Health Edited by: Edited by N.E. Odongo, M. Garcia & G.J. Viljoen, Proceedings of joint FAO/IAEA meeting, Vienna.
- Fievez V, **Goel G.**, Vlaeminck B, Boeckhaert, C. 2010. Potential of fat supplements to mitigate ruminal methanogenesis. In: Dynamics in Animal Nutrition, Edited by: Jannes Doppenberg and Piet van der Aar Wageningen Academic Publishers, pp 161-184
- Singh, R., **Goel, G.** and Mathur S. 2005. Direct vat starters for production of fermented milk products. In: Advances in Applied Dairy and Food Microbiology, Contemporary Reviews. Singh R, Tomar S.K. and Goel, G. (eds.) Published by Geeta Somani Agrotech Publishing Academy, Udaipur, India, pp 382-393
- **Goel, G.**, Kumar, A., Singh, S. 2007. Probiotic foods- a new way of healthiness. In: Advances in Microbiology, Ed. Trivedi, P. C., Agrobios Publishers, Jodhpur, India, pp: 237-252
- Nagpal R., Puniya, A. K., Griffith, G. W., **Goel, G.**, Puniya, M., Sehgal, J. P., Singh, K. 2009. Anaerobic ruminal fungi: potential and applications. In: Khachatourians G, Arora DK, Rajendran TP, Srivastava AK (Eds.) Agriculturally important microorganisms: An international multi-volume annual review series (Vol. I: Chapter 17). Academic World International, Bhopal, India, pp 375-393

Honorary Work (Editor, reviewer, committee expert, Session Chair, etc.)

Reviewer: Frontiers in Microbiology, Journal of Molecular catalysis: B., Fungal Biology, PLOSone, Anaerobe, Gene, FEMS Microbiology letters, Livestock Science, International Journal of Biodegradation and Biodeterioration, Journal of Food safety, Canadian Journal of Animal Science, Journal of Yeast and Fungal Research, Animal, Current Microbiology, The Science of total Environment, Research in Biotechnology, Bioresources and Bioprocessing, Biofouling, Korean Journal of Chemical Engineers, Journal of Food Science and Agriculture, Journal of Food Science, Food Research International

Reviewerer of Project Grant:

Czech Science Foundation sponsored research project on:
Multi-omics analysis of genus Cronobacter focused on the study of interactions with host tissues

Polish National Science Center: PRELUDIUM, Determination of the effect of flavonoid O-methylglucosides obtained by biotransformations on the growth of selected probiotic and pathogenic microorganisms

Review Editor: Frontiers in Systematic Microbiology

Session Chair on Biotechnology, International Conference on Emerging Trends in Engineering and Technology at Geeta Institute of Management and Technology, Kurukshetra,

Session Chair, Third National Conference on Contemporary Food Processing and Preservation Technologies” held at Shoolini University of Biotechnology and Management, Solan, Himachal Pradesh, during 12-13 April 2018

Invited talk on “Application of in-vitro gut simulated models in assessing the bioaccessibility of key nutrients” Third National Conference on Contemporary Food Processing and Preservation Technologies” held at Shoolini University of Biotechnology and Management, Solan, Himachal Pradesh, during 12-13 April 2018

Gunjan Goel