

Curriculum Vitae



Dr. R. S. Singh
Professor
Department of Biotechnology
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Research Interests

Dr. R. S. Singh is well experienced in protein and carbohydrate biotechnology, which includes industrial enzymes from microbial sources, microbial exopolysaccharides and microbial lectins. The major aims of my laboratory are to develop processes for the production and purification of industrial enzymes & microbial exopolysaccharides and their applications in food & fermentation industry. Microbial lectins after purification and characterization are evaluated for their mitogenic & therapeutic potentials. Applications of all these biomolecules in food and pharmaceutical industry are undertaken. We are also exploiting molecular biology and bioprocessing approaches for enhancing the efficiency of various food enzymes such as aspartase, rhamnosidase, inulinases, etc.

Qualifications: M.Sc., M.Ed., M.Phil., Ph.D.

Specialization: Microbial Biotechnology

Employment History

August 2, 2009 to till date: Professor, Department of Biotechnology, Punjabi University, Patiala

March 12, 2011 to March 12, 2014: Head, Department of Biotechnology, Punjabi University, Patiala

August 2, 2003 to August 1, 2009: Associate Professor, Department of Biotechnology, Punjabi University, Patiala

August 2, 1998 to August 1, 2003: Assistant Professor (Senior scale), Department of Biotechnology, Punjabi University, Patiala

August 2, 1994 to August 1, 1998: Assistant Professor, Department of Biotechnology, Punjabi University, Patiala

Fellowships/Visiting Scientist/Awards

1. Visiting Professor (2017): University Clermont Auvergne, Clermont-Ferrand, France, 01/06/2017-30/06/2017.
2. Best Paper Award (2016). ICNNS 2016: 18th International Conference on Nutritional and Nutraceutical Sciences, Singapore, July 4-5, 2016.
3. Visiting Professor (2014): Swiss Federal Institute of Technology (EPFL), Laussane, Switzerland, 01/09/2014-30/09/2014.
4. Award for popularization of science during celebration of “National Science Day-2014”, Baba Farid University of Health Sciences, Faridkot, Punjab, India.
5. BRSI Fellow (2012): The Biotech Research Society, India.
6. INSA Visiting Scientist (2008): National Institute of Pharmaceutical Education & Research, Mohali, India
7. MASHAV-UNESCO Fellowship (2006): Faculty of Agriculture, Food & Environmental Quality Sciences, Rehovot Campus, Hebrew University of Jerusalem, Israel.

Professional Memberships

1. Fellow of Biotech Research Society, India
2. Life Member of Association of Microbiologists of India
3. Life Member of Indian Science Congress Association
4. Life Member of Mycological Society of India
5. Life Member of Punjab Academy of Sciences
6. Member of Asian Federation of Biotechnology
7. President, BRSI Unit, Punjabi University, Patiala

Honorary Consultancy

1. Mount Shivalik Breweries Limited, Bhankarpur, Patiala (Pb.)
2. Rangar Breweries Limited, Mehatpur, Una (HP)
3. Pepsi Foods Limited, Channo, Sangrur (Pb.)
4. Verka Milk Plant (Milkfed), Patiala (Pb.)

Editorial Assignments

1. Member, Editorial Advisory Board (2011-till date), International Journal of Food & Fermentation Technology.
2. Guest editor: *Biologia* 68(6), 2013
3. *Journal of Scientific & Industrial Research* 72(9-10), 2013

4. Indian Journal of Experimental Biology 51(11), 2013
5. Member, Guest Editorial Advisory Board, Applied Biochemistry and Biotechnology, Volume 151, Nos. 2-3, 2008 (Special Issue on “New Horizons in Biotechnology”, 2007).
6. Assistant Editor (2004-06), Journal of Punjab Academy of Sciences.

Sequences Submitted to GenBank (NCBI)

1. Singh R.S. and Chauhan K. (2017) *Mucor circinelloides* BGPUP-9 18S ribosomal RNA gene, Partial sequence. Accession No. MF461643.
2. Singh R.S. and Kaur N. (2015) *Rhodosporidium paludigenum* MB-1 18S ribosomal RNA gene, Partial sequence. Accession No. KT807881.
3. Singh R.S. and Chauhan K. (2015) *Penicillium oxalicum* BGPUP-4 18S ribosomal RNA gene, Partial sequence. Accession No. KP780809.
4. Singh R.S., Singh R.P. and Singh T. (2015) *Aspergillus tritici* BGPUP06 18S ribosomal RNA gene, Partial sequence. Accession No. KP780810.
5. Singh R.S. and Singh R.P. (2012) *Bacillus safensis* AS-08 16S ribosomal RNA gene, Partial sequence. Accession No. JX849661.
6. Singh R.S. (2010). *Aeromonas media* strain NFB-5 16S ribosomal RNA gene, partial sequence. Accession No. GU810523.
7. Singh R.S. and Yadav M.K. (2009). *Aeromonas media* strain NFB-5 L-aspartate ammonia-lyase (*aspA*) gene, partial sequence. Accession No. GQ925830.
8. Kumar R., Yadav B.R. and Singh R.S. (2009). *Bubalus bubalis* breed Murrah immunoglobulin G3 heavy chain constant region gene, partial cds. Accession No. GQ140262.
9. Vemana K., Bag S., Jain R.K. and Singh R.S. (2007). Tobacco streak virus isolate Tamil Nadu coat protein mRNA, complete cds. Accession No. EU085385.
10. Vemana K., Bag S., Jain R.K. and Singh R.S. (2007). Tobacco streak virus isolate Andhra Pradesh coat protein mRNA, complete cds. Accession No. EU085386.

List of Publications

(a) Patents:

1. Singh R.S., Sooch B.S. and Puri M. (2015). An improved process for inulinase production. Indian Patent No. 265023.
2. Puri M., Chugh S.K. and Singh R.S. (2007). A novel strain of *Aspergillus* for the production of gluconic acid and the process therefore. Indian Patent Application No. 1449/DEL/2007.

(b) Books:

1. Singh R.S., Singhania R.R., Pandey A. and Larroche C., Eds. (2019). *Biomass, Biofuels, Biochemicals: Advances in Enzyme Technology*, Elsevier B.V., Netherlands.

2. Singh R.S., Pandey A. and Gnansounou E., Eds. (2017). *Biofuels: Production & Future Perspectives*, CRC Press, Taylor & Francis Group, USA.
3. Hasija M.L., Saini M.S., Bhatti H.S., Singh D., Saggoo M.I.S., Singal K.K., Singh S.P., Singh J.I.S., Singh R.S., Viridi S.P.S. Eds. (2016). *Children Encyclopedia (Science & Technology), Vol IV (Part-I)*, Publication Bureau, Punjabi University, Patiala, India (Publication in Punjabi language).
4. Singh R.S., Pandey A. and Larroche C., Eds. (2014). *Advances in Industrial Biotechnology*, IK International Publishing House Pvt. Ltd., India.
5. Joshi V.K. and Singh R.S., Eds. (2012). *Food Biotechnology: Principles and Practices*, IK International Pvt. Ltd., New Delhi, India.

(c) Book Chapters:

1. Yadav M., Sehrawat N., Sharma A.K., Singh R.S., Bhari R. and Kumar A. (2019). Introduction and applications of microbial products in the food processing industry. **In:** *Microbial Enzymes and Additives for the Food Industry*, Kumar A., Kumar M. and Sehrawat N. (Eds.), Nova Science Publishers Inc., New York, USA, pp. 1-21.
2. Singh R.S. and Singh T. (2019). Microbial inulinases and pullulanases in the food industry. **In:** *Microbial Enzymes and Additives for the Food Industry*, Kumar A., Kumar M. and Sehrawat N. (Eds.), Nova Science Publishers Inc., New York, USA, pp. 23-52.
3. Yadav M., Sharma A.K., Singh R.S., Sehrawat N. and Kumar V. (2019). Aspartase, asparainase and naringinase: Current status and perspectives for the food industry. **In:** *Microbial Enzymes and Additives for the Food Industry*, Kumar A., Kumar M. and Sehrawat N. (Eds.), Nova Science Publishers Inc., New York, USA, pp. 277-314.
4. Singh R.S., Singh T. and Pandey A. (2019). Microbial enzymes – An overview. **In:** *Biomass, Biofuels, Biochemicals: Advances in Enzyme Technology*, Singh R.S., Singhanian R.R., Pandey A. and Larroche C. (Eds.), Elsevier, B.V., Netherlands, pp. 1-40.
5. Singh R.S., Singh T. and Singh A.K. (2019). Enzymes as diagnostic tools. **In:** *Biomass, Biofuels, Biochemicals: Advances in Enzyme Technology*, Singh R.S., Singhanian R.R., Pandey A. and Larroche C. (Eds.), Elsevier, B.V., Netherlands, pp. 225-271.
6. Sharma A., Singh R.S., Gupta G. Ahmad T. and Kaur B. (2019). Metabolic engineering of enzyme-regulated bioprocesses. **In:** *Biomass, Biofuels, Biochemicals: Advances in Enzyme Technology*, Singh R.S., Singhanian R.R., Pandey A. and Larroche C. (Eds.), Elsevier, B.V., Netherlands, pp. 293-323.
7. Ahmad T., Singh R.S., Gupta G., Sharma A. and Kaur B. (2019). Metagenomics in the search of industrial enzymes. **In:** *Biomass, Biofuels, Biochemicals: Advances in Enzyme Technology*, Singh R.S., Singhanian R.R., Pandey A. and Larroche C. (Eds.), Elsevier, B.V., Netherlands, pp. 419-451.
8. Bhari R. and Singh R.S. (2019). Microbial production of natural flavors. **In:** *Technology of Handling, Packaging, Processing, Preservation of Fruits and Vegetables: Theory and Practicals*, Joshi V.K. (Ed.), New India Publishing Agency, New Delhi, India, pp. 767-813.

9. Singh R.S., Chauhan K. and Singh R.P. (2018). Trends in enzymatic synthesis of high fructose syrup. ***In: Technologies in Food Processing***, Sharma H.K. and Panesar P.S. (Eds.), Apple Academic Press, New Jersey, USA, pp. 82-108.
10. Singh R.S., Chauhan K. and Singh R.P. (2017). Enzymatic approaches for the synthesis of high fructose syrup. ***In: Plant Biotechnology: Recent Advancements and Developments***, Gahlawat S.K., Salar R.K., Siwach P., Duhan J.S., Kumar S. and Kaur P. (Eds.), Springer Nature Singapore Pte Ltd., Singapore, pp. 189-212.
11. Singh R.S. and Singh R.P. (2017). Inulinases. ***In: Current Developments in Biotechnology and Bioengineering Vol. 7 Production, Isolation and Purification of Industrial Products***, Pandey A., Negi S. and Soccol C.R. (Eds.), Elsevier, USA, pp. 423-446.
12. Singh R.S. and Walia A.K. (2017). Biofuels: Historical perspectives and public opinions. ***In: Biofuels: Production & Future Perspectives***, Singh R.S., Pandey A. and Gnansounou E. (Eds.), CRC Press, Taylor & Francis Group, USA, pp. 3-24.
13. Sooch B.S., Mann M.K. and Singh R.S. (2017). Current insights into proteomics of biofuel crops and cyanobacteria. ***In: Biofuels: Production & Future Perspectives***, Singh R.S., Pandey A. and Gnansounou E. (Eds.), CRC Press, Taylor & Francis Group, USA, pp. 511-540.
14. Bhari R., Kaur M. and Singh R.S. (2017). New trends in enzyme immobilization and nanostructured interfaces for biofuels production. ***In: Biofuels: Production & Future Perspectives***, Singh R.S., Pandey A. and Gnansounou E. (Eds.), CRC Press, Taylor & Francis Group, USA, pp. 491-510.
15. Yadav M., Sehrawat N., Kaur S.P. and Singh R.S. (2017). Biofuel cells: Concept and perspectives for implantable devices. ***In: Biofuels: Production & Future Perspectives***, Singh R.S., Pandey A. and Gnansounou E. (Eds.), CRC Press, Taylor & Francis Group, USA, pp. 541-566.
16. Bhari R. and Singh R.S. (2017). Novel enzymes in biofuel production. ***In: Biofuels: Production & Future Perspectives***, Singh R.S., Pandey A. and Gnansounou E. (Eds.), CRC Press, Taylor & Francis Group, USA, pp. 461-490.
17. Singh R.S. and Thakur S. (2017). Global demands of biofuels: Technologies, economic aspects, global market and policies. ***In: Biofuels: Production & Future Perspectives***, Singh R.S., Pandey A. and Gnansounou E. (Eds.), CRC Press, Taylor & Francis Group, USA, pp. 41-58.
18. Singh R.S. and Kaur N. (2015). Microbial biopolymers for edible film and coating applications. ***In: Advances in Biotechnology***, Nawani N.N., Khetmalas M., Razdan P.N. and Pandey A. (Eds.), IK International Publishing House Pvt. Ltd., India, pp. 187-216.
19. Singh R.S. (2014). Industrial biotechnology: An overview. ***In: Advances in Industrial Biotechnology***, Singh R.S., Pandey A. and Larroche C. (Eds.), IK International Publishing House Pvt. Ltd., India, pp. 1-35.
20. Singh R.S. and Saini G.K. (2014). Pullulan as a therapeutic tool in biomedical applications. ***In: Advances in Industrial Biotechnology***, Singh R.S., Pandey A. and Larroche C. (Eds.), IK International Publishing House Pvt. Ltd., India, pp. 263-291.

21. Singh R.S. and Bhari R. (2014). Current status of microbial lectins in biomedical applications. ***In: Advances in Industrial Biotechnology***, Singh R.S., Pandey A. and Larroche C. (Eds.), IK International Publishing House Pvt. Ltd., India, pp. 315-362.
22. Singh R.S. (2014). Biotechnological approaches for valorization of whey. ***In: Advances in Industrial Biotechnology***, Singh R.S., Pandey A. and Larroche C. (Eds.), IK International Publishing House Pvt. Ltd., India, pp. 443-478.
23. Singh, R.S. and Thakur S. (2013). Vaccines: Past and present perspectives. ***In: Biotechnology in Medicine and Herbal Drug Development***, Bansal, P. and Das S.N. (Eds.), Basera Verlag, Germany, pp. 25-40.
24. Singh R.S. and Thakur S. (2013). Biotechnology in assisted reproductive technology. ***In: Recent Advances in Assisted Reproductive Technology***, Gill S.S., Singh Z. and Bansal P. (Eds.), Basera Verlag, Germany, pp. 128-142.
25. Singh R.S. and Saini G.K. (2012). Biosynthesis of pullulan and its applications in food and pharmaceutical industry. ***In: Microorganisms in Sustainable Agriculture and Biotechnology, Part 2***, Satyanarayana T., Johri B.N. and Prakash A. (Eds.), Springer-Verlag, USA, pp. 509-553.
26. Joshi V.K. and Singh R.S. (2012). Food biotechnology: An overview. ***In: Food Biotechnology: Principles and Practices***, Joshi V.K. and Singh R.S. (Eds.), IK International Pvt. Ltd., New Delhi, India, pp. 1-37.
27. Singh R.S. and Bhari R. (2012). Microbial flavours: Current status and future prospects. ***In: Food Biotechnology: Principles and Practices***, Joshi V.K. and Singh R.S. (Eds.), IK International Pvt. Ltd., New Delhi, India, pp. 691-738.
28. Singh R.S. and Saini G.K. (2012). Functional foods. ***In: Food Biotechnology: Principles and Practices***, Joshi V.K. and Singh R.S. (Eds.), IK International Pvt. Ltd., New Delhi, India, pp. 293-336.
29. Singh R.S. (2011). Enzymatic preparation of high fructose syrup from inulin. ***In: Bio-Processing of Foods***, Panesar P.S., Sharma H.K. and Sarkar B.C. (Eds.), Asiatech Publishers Inc., New Delhi, India, pp. 77-98.
30. Singh R.S., Sooch B.S. and Attri D. (2011). Bioreactor technology in wine production. ***In: Handbook of Enology: Principles, Practices and Recent Innovations***, Joshi V.K. (Ed.), Asiatech Publishers Inc., New Delhi, India, pp. 802-860.
31. Puri M., Kaur A., Singh R.S. and Kanwar J.R. (2008). Immobilized enzyme technology for debittering citrus fruit juices. ***In: Food Enzymes: Application of New Technologies***, Busto M.D. and Ortega N. (Eds.), Transworld Research Network, Trivandrum, India, pp. 91-103.
32. Singh R.S. and Singh B. (2001). Whey pollution problems and potential of microbes for its utilization. ***In: Environmental Pollution and Management of Waste Waters by Microbial Techniques***, Pathade G.R. and Goel P.K. (Eds.), ABD Pubs., Jaipur, pp. 104-114.

(d) Book Reviews:

1. Singh R.S. (2017). Indigenous Fermented Foods of South Asia, Ist Edition, V.K. Joshi (Ed.), CRC Press, Boca Raton, FL, USA, 2016 (pp. 886, £ 136, ISBN 9781439887837, CAT# K14059): *Int. J. Food Ferment. Technol.* **6(2)**: 480-481.

(e) Technical Reports:

1. Bhari R. and Singh R.S. (2019). Purification and characterization of a bacterial keratinase for the production of nitrogen fertilizer. Report submitted to SERB, Department of Science and Technology, Govt. of India, New Delhi.
2. Singh R.S. (2012). Molecular cloning, over expression, purification and characterization of a novel aspartase. Final Technical Report submitted to Council of Scientific & Industrial Research, Govt. of India, New Delhi.
3. Singh R.S. (2011). Development of a stable continuous flow system for the preparation of high fructose syrup using immobilized inulinase. Final Technical Report submitted to University Grants Commission, Govt. of India, New Delhi.
4. Puri M. and Singh R.S. (2010). Molecular cloning, expression and purification of a novel rhamnosidase. Final Technical Report submitted to Council of Scientific & Industrial Research, Govt. of India, New Delhi.
5. Singh R.S. (2007). Studies on the production, process optimization and purification of a novel thermostable aspartase. Final Technical Report submitted to Council of Scientific & Industrial Research, Govt. of India, New Delhi.
6. Singh R.S. (2002). Studies on citric acid production from whey using yeast cultures. Final Technical Report submitted to University Grants Commission, Govt. of India, New Delhi.
7. Singh R.S. (1998). Studies on ethanol production from whey by free and immobilized yeast cells. Final Technical Report submitted to University Grants Commission, Govt. of India, New Delhi.

(f) Research Publications (2013-2018):

1. Bhari R., Kaur M., Singh R.S., Pandey A. & Larroche C. (2018). Bioconversion of chicken feathers by *Bacillus aerius* NSMk2: A potential approach in poultry waste management. *Biores. Technol. Rep.* **3**: 224-230.
2. Singh R.S., Kaur N., Sharma R. & Rana V. (2018). Carbamoylethyl pullulan: QbD based synthesis, characterization and corneal wound healing potential. *Int. J. Biol. Macromol.* **118**: 2245-2255
3. Singh R.S., Chauhan K., Pandey A., Larroche C. & Kennedy J.F. (2018). Purification and characterization of two isoforms of exoinulinase from *Penicillium oxalicum* BGPUP-4 for the preparation of high fructose syrup from inulin. *Int. J. Biol. Macromol.* **118**: 1974-1983.
4. Singh R.S., Chauhan K., Kaur R. & Kaur R. (2018). Inulinase production in shake-flask fermentations from *Mucor circinelloides* BGPUP-9. *J. Appl. Biol. Biotechnol.* **6**: 18-25.

5. Singh R.S., Chauhan K. & Jindal A. (2018). Response surface optimization of solid state fermentation for inulinase production from *Penicillium oxalicum* using corn bran. *J. Food Sci. Technol.* **55**: 2533-2540.
6. Kaur R., Panesar P.S. & Singh R.S. (2018). Utilization of agroindustrial residues for the production of β -galactosidase using fungal isolate under solid state fermentation conditions. *Acta Alimentaria* **47**: 162-175.
7. Singh R.S., Walia A.K., Kaur J., Singh D.P. & Rajput A. (2018). New cell surface bound lectins with complex carbohydrate specificity from members of green algae. *Ind. J. Exp. Biol.* **56**: 484-492.
8. Singh R.S., Walia A.K. & Kennedy J.F. (2018). Purification and characterization of a mitogenic lectin from *Penicillium duclauxii*. *Int. J. Biol. Mac.* **116**: 423-433.
9. Singh R.S. & Chauhan K. (2018). Production, purification, characterization and applications of fungal inulinases. *Curr. Biotechnol.* **7**: 242-260.
10. Singh R.S. & Walia A.K. (2018). Lectins from red algae and their biomedical potential. *J Appl Phycol.* **30**:1833-1858.
11. Singh R.S., Chauhan K., Pandey A. & Larroche C. (2018). Biocatalytic strategies for the production of high fructose syrup from inulin. *Bioresour. Technol.* **260**: 395-403.
12. Singh R.S., Chauhan K., Singh J., Pandey A. & Larroche C. (2018). Solid state fermentation of carrot pomace for the production of inulinase from *Penicillium oxalicum* BGPUP-4. *Food Technol. Biotechnol.* **56**: 31-39.
13. Singh R.S. & Kaur N. (2018). Biochemical and molecular characterization of a new pullulan producer *Rhodospiridium paludigenum* PUPY-06. *J. Appl. Biol. Biotechnol.* **6**: 28-37.
14. Panesar P.S., Kaur R., Singh R.S. & Kennedy J.F. (2018). Biocatalytic strategies in the production of galacto-oligosaccharides and its global status. *Int. J. Biol. Macromol.* **111**: 667-679.
15. Singh R.S. & Chauhan K. (2018). Sequential statistical optimization of lactose-based medium and process variables for inulinase production from *Penicillium oxalicum* BGPUP-4. *3 Biotech.* **8**: 38.
16. Singh R.S., Walia A.K., Pratibha, Khattar J.I.S. & Singh D.P. (2017). New cell surface lectins with complex carbohydrate specificity from cyanobacteria. *Ind. J. Exp. Biol.* **55**: 514-522.
17. Singh R.S., Kaur N., Rana V. & Kennedy J.F. (2017). Pullulan: A novel molecule for biomedical applications. *Carbohydr. Polym.* **171**: 102-121.
18. Singh R.S., Walia A.K., Khattar J.I.S., Singh D.P. & Kennedy J.F. (2017). Cyanobacterial lectins characteristics and their role as antiviral agents. *Int. J. Biol. Macromol.* **102**: 475-496.
19. Singh R.S., Kaur H.P. & Kennedy J.F. (2017). Modulation of immunocyte functions by a mucin-specific lectin from *Aspergillus gorakhpurensis*. *Int. J. Biol. Macromol.* **101**: 172-178.
20. Singh R.S., Chauhan K. & Kennedy J.F. (2017). A panorama of bacterial inulinases: Production, purification, characterization and industrial applications. *Int. J. Biol. Macromol.* **96**: 312-322.

21. Singh R.S., Kaur H.P., Rana V. & Kennedy J.F. (2017). Immunomodulatory and therapeutic potential of a mucin-specific mycelia lectin from *Aspergillus panamensis*. *Int. J. Biol. Macromol.* **96**: 241-248.
22. Singh R.S., Singh R.P. & Kennedy J.F. (2017). Immobilization of yeast inulinase on chitosan beads for the hydrolysis of inulin in a batch system. *Int. J. Biol. Macromol.* **95**: 87-93.
23. Singh R.S. & Chauhan K. (2017). Inulinase production from a new inulinase producer, *Penicillium oxalicum* BGPUP-4. *Biocatal. Agric. Biotechnol.* **9**: 1-10.
24. Panesar P.S., Kaur R. & Singh R.S. (2016). Isolation and screening of fungal strains for β -galactosidase production. *Int. J. Biol. Biomol. Agric. Food Biotechnol. Eng.* **10**: 358-362.
25. Singh R.S., Kaur H.P. & Kanwar J. (2016). Mushroom lectins as promising anticancer substances. *Curr. Protein Pept. Sci.* **17**: 797-807.
26. Singh R.S., Walia A.K. & Kanwar J.R. (2016). Protozoa lectins and their role in host-pathogen interactions. *Biotechnol. Adv.* **34**: 1018-1029.
27. Singh R.S., Kaur N., Rana V. & Kennedy J.F. (2016). Recent insights on applications of pullulan in tissue engineering. *Carb. Poly.* **153**: 455-462.
28. Singh R.S., Singh R.P. & Kennedy J.F. (2016). Endoinulinase production by a new endoinulinase producer *Aspergillus tritici* BGPUP6 using a low cost substrate. *Int. J. Biol. Macromol.* **92**: 1113-1122.
29. Singh R.S., Walia A.K., Kanwar J.R. & Kennedy J.F. (2016). Amoebiasis vaccine development: A snapshot on *E. histolytica* with emphasis on perspectives of Gal/GalNAc lectin. *Int. J. Biol. Macromol.* **91**: 258-268.
30. Singh R.S. & Walia A.K. (2016). New mycelial lectins from *Penicilli* with complex carbohydrate specificity. *Biologia* **71**: 388-395.
31. Bhari R., Kaur B. & Singh R.S. (2016). Lectin activity in mycelial extracts of *Fusarium* species. *Braz. J. Microbiol.* **47**: 775-780.
32. Singh R.S., Singh R.P. & Kennedy J.F. (2016). Recent insights in enzymatic synthesis of fructooligosaccharides from inulin. *Int. J. Biol. Marcomol.* **85**: 565-572.
33. Kanwar J.R., Roy K., Patel Y., Zhou S., Singh H.R., Singh D., Nasir M., Sehgal R., Sehgal A., Singh R.S., Garg S. & Kanwar R.K. (2015). Multifunctional iron bound lactoferrin and nanomedicinal approaches to enhance its bioactive functions. *Molecules* **20**: 9703-9731.
34. Kaur R., Panesar P.S. & Singh R.S. (2015). Utilization of whey for the production of β -Galactosidase using yeast and fungal culture. *Int. J. Biol. Biomol. Agric. Food Biotechnol. Eng.* **9**: 703-707.
35. Singh R.S., Kaur H.P. & Singh J. (2015). Purification and characterization of a mycelial mucin-specific lectin from *Aspergillus panamensis* with potent mitogenic and antibacterial activity. *Process Biochem.* **50**: 2251-2258.
36. Singh R.S., Kaur N. & Kennedy J.F. (2015). Pullulan and pullulan derivatives as promising biomolecules for drug and gene targeting. *Carb. Poly.* **123**: 190-207.
37. Singh R.S., Bhari R. & Kaur R. (2015). Purification, characterization, and mitogenic potential of a mucin-specific mycelial lectin from *Aspergillus sparsus*. *Appl. Biochem. Biotechnol.* **175**: 1938-1947.
38. Singh R.S., Thakur S.R. & Bansal P. (2015). Algal lectins as promising biomolecules for biomedical research. *Crit. Rev. Microbiol.* **41**: 77-88.

39. Singh R.S. & Singh R.P. (2014). Response surface optimization of endoinulinase production from a cost effective substrate by *Bacillus safensis* AS-08 for hydrolysis of inulin. *Biocat. Agric. Biotech.* **3**: 365-372.
40. Singh R.S. & Thakur S. (2014). Antimicrobial activity and carbohydrate specificity of new mycelial lectins from *Fusarium* sp. *Biologia* **69**: 1295-1302.
41. Singh R.S., Kaur H.P. & Singh J. (2014). Purification and characterization of a mucin specific mycelial lectin from *Aspergillus gorakhpurensis*: Application for mitogenic and antimicrobial activity. *PloS One* **9**: e109265
42. Singh R.S. & Walia A.K. (2014). Characteristics of lichen lectins and their role in symbiosis. *Symbiosis* **62**: 123-134.
43. Singh R.S., Kaur H.P. & Singh J. (2014). New lectins from aspergilli and their carbohydrate specificity. *Biologia* **69**: 15-23.
44. Singh R.S. & Walia AK. (2014). Microbial lectins and their prospective mitogenic potential. *Crit. Rev. Microbiol.* **40**: 329-347.
45. Singh R.S., Yadav M. & Badhan R. (2013). Statistical optimization of aspartase production from *Aeromonas media* NFB-5 in a stirred tank reactor. *Int. J. Food Ferment. Technol.* **3**: 115-122.
46. Singh R.S. (2013). A comparative study on cell disruption methods for release of aspartase from *E. coli* K-12. *Indian J. Exp. Biol.* **51**: 997-1003.
47. Singh R.S., Jain P. & Kaur H.P. (2013). Characterization and antimicrobial activity of lectins from *Penicillium* sp. *Indian J. Exp. Biol.* **51**: 984-991.
48. Singh R.S., Kaur H.P., Kumar P. & Kaur H. (2013). Purification and characterization of a thermostable mycelial lectin from basidiomycete *Lentinus squarrosulus*. *Biologia* **68**: 1034-1040.
49. Singh R.S., Singh R.P. & Yadav M. (2013). Molecular and biochemical characterization of a new endoinulinase producing bacterial strain of *Bacillus safensis* AS-08. *Biologia* **68**: 1028-1033.
50. Singh R.S. and Saini G.K. (2013). Production of inulinase from raw *Dahlia* inulin by *Kluyveromyces marxianus* YS-1. *J. Sci. Ind. Res.* **72**: 603-610.
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