
Smriti Priya

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PERSONAL INFORMATION

Date of Birth	25 th March, 1983
Gender	Female
Nationality	Indian
Marital Status	Married
Languages	English, Hindi, Punjabi
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RESEARCH BACKGROUND

- **Scientist** (*Neurotoxicity of pesticides and heavy metals*) Indian Institute of Toxicology Research-CSIR, Lucknow INDIA (July 2014 to present).
- **Postdoc Fellow** (*Functionality and Mechanism of the Stress-Responsive Molecular Chaperone GroEL-ES*) Department of Plant Molecular Biology, University of Lausanne, Switzerland (Jan 2011- Feb, 2014).
- **Research Associate** (*Potato genome sequencing and functional genomics*) Genome Sequencing Lab, Division of Crop Improvement, Central Potato Research Institute, Shimla, India (July 2009-March 2010).

ACADEMIC BACKGROUND

- **Ph.D. Biochemistry** (2009) "*Purification, characterization and status of α -amylase inhibitors in wheat*" Department of Biochemistry, Punjab Agricultural University, India.
- **Master of Science in Biochemistry** (2005) "Biochemical characterization of promising rice bean (*Vigna umbellata*) germplasm" Department of Biochemistry, CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur, India.
- **Bachelor of Science** (2003) with Physics, Mathematics, Chemistry. Himachal Pradesh University, Shimla, India.

PUBLICATIONS

1. Rayees U.H. Mattoo, America Farina Henriquez Cuendet, Sujatha Subanna, Andrija Finka, **Smriti Priya**, Sandeep K. Sharma and Pierre Goloubinoff (2014) Synergism between a foldase and an unfoldase: Reciprocal dependence between the thioredoxin-like activity of DnaJ and the polypeptide-unfolding activity of DnaK, *Frontiers in Molecular Biosciences* (doi: 10.3389/fmolb.2014.00007)
2. **Smriti Priya**, Sandeep K. Sharma, Pierre Goloubinoff (2013) Molecular chaperones antagonize protein conformational diseases by acting as unfolding catalysts on toxic

misfolded and aggregated protein conformers **FEBS Letts.**
Doi:10.1016/j.febslet.2013.05.014. [JIF 3.74]

3. Rayees Mattoo, Sandeep K. Sharma, **Smriti Priya**, Andrija Finka, Paolo de Los Rios and Pierre Goloubinoff (2013) Mammalian Hsp110 acts as an ATP-fuelled polypeptide unfolding enzyme **Journal of Biological Chemistry**. 288, 21399-21411 [JIF 5.023]
4. **Smriti Priya**, Sandeep K. Sharma, Vishal Sood, Rayees U.H. Mattoo, Andrija Finka, Abdulsalem Azem, Paolo de Los Rios and Pierre Goloubinoff (2013) GroEL and CCT are catalytic unfoldases mediating out-of-cage polypeptide refolding without ATP, **Proceedings of the National Academy of Sciences of the United States of America (PNAS)**, doi:10.1073/pnas.1219867110.
5. Antonino Natalello*, Rayees U.H. Mattoo*, **Smriti Priya**, Sandeep K. Sharma, Pierre Goloubinoff and Silvia M. Doglia (2013) Biophysical characterization of two different stable misfolded monomeric polypeptides that are chaperone-amenable substrates, **Journal of Molecular Biology**, 425 (7) 1158–1171 (*equal contribution).
6. Therese Jacobson, Clara Navarrete, Sandeep K. Sharma, Theodora Sideri, Sebastian Ibstedt, **Smriti Priya**, Chris Grant, Philipp Christen, Pierre Goloubinoff and Markus J. Tamás (2012) *Arsenite interferes with protein folding and triggers formation of toxic protein aggregates in yeast cells*, **Journal of Cell Science** 125 (21) 5073-5083.
7. **Smriti Priya**, Kaur N, Gupta A. (2010) Purification, characterization and inhibition studies of α -amylase of *Rhizopertha dominica*, **Pesticide Biochemistry and Physiology** 98: 231-237.
8. **Smriti Priya**, Sushil Kumar, Narinder Kaur, Anil K. Gupta (2013) Specificity of alpha amylase and trypsin inhibitor proteins in wheat against insect pest. **New- Zealand Journal of Crop and Horticultural Sciences** 41(1): 49- 56.
9. Katoch Rajan, Sood Selej, **Smriti Priya** et al. (2005) The nutritional status of natural grassland / pastures and silvi-pastoral system of Himachal Pradesh: A Review, in **Forage Research** 31(3): 153-162.

ABSTRACTS/ PRESENTATIONS

1. Therese Jacobson, Clara Navarrete, **Sandeep K. Sharma**, Theodora Sideri, Sebastian Ibstedt, Smriti Priya, Chris Grant, Philipp Christen, Pierre Goloubinoff and Markus J. Tamás (2012) *Arsenite interferes with protein folding and triggers formation of toxic protein aggregates in yeast*, Yeast Genetics and Molecular Biology Meeting, Princeton University, Princeton, New Jersey, USA (31July-5 August).
2. Smriti Priya, **Sandeep K. Sharma** and Pierre Goloubinoff (2012) Chaperonins drive the ATP-independent catalytic unfolding of stable misfolded polypeptides but use ATP-hydrolysis to evict sticky inhibitory intermediates. *Protein folding: moving beyond simple*

model systems, The David Lopatie Conference Centre, Weizmann Institute of Science, Rehovot, Israel (13-17 May).

3. **Sandeep K. Sharma**, Smriti Priya, Pierre Goloubinoff and Philipp Christen (2011) Micromolar amounts of arsenite inhibit chaperone-mediated and spontaneous protein refolding, *The Biology of Molecular Chaperones*, Grudlsee, Austria (19-24 May).
4. **Smriti Priya**, Kaur N, Gupta A. Diversity of proteinaceous inhibitors of α -amylase in wheat: implication in nutrition and defense against biotic stresses. Published in 12th Punjab science Congress, (2009).
5. Katoch Rajan, Sood Selej, **Smriti Priya** et al. Occurrence of disease in ricebean [*Vigna umbellata* (Thumb.) Ohwi and Ohashi] in hill region of Himachal Pradesh. Abstract published in IFLRV-IV, New Delhi (2005).

Popular Articles

1. Katoch Rajan, Sood Selej, **Smriti Priya**. *Valuable information for Rice bean crop production*, Kheti Duniya (special Kharif issue), Kheti Duniya, Published from CSK HPKV, Palampur, Himachal Pradesh, India (2005)
2. Katoch Rajan, Sood Selej, **Smriti Priya**. *Leguminous crops: Help in improving the land nutrition*, Kheti Duniya, Published from CSK HPKV, Palampur, Himachal Pradesh, India (2005)
3. Katoch Rajan, Sood Selej, **Smriti Priya**. *Suggestions for cropping of rice bean*, Kheti Duniya, Published from CSK HPKV, Palampur, Himachal Pradesh, India (2005)

TECHNICAL SKILLS

- **Proteins biochemistry:** Protein expression and purification (DnaK, DnaJ, GroELS, CbpA, luciferase), FPLC, HPLC, gel filtration, affinity chromatography, enzymatic assays, enzyme kinetics, ELISA, Western blot, luminometry, electrophoresis (2D, gradient-gel), radioactivity assays, steady-state and single-turnover ATPase assays, protein folding (luciferase, rhodanese, malate dehydrogenase, glucose-6-phosphate dehydrogenase, alkaline phosphatase), light scattering.
- **Molecular biology:** DNA and RNA isolation, GS FLX DNA sequencing, primer designing, PCR, RT-PCR, em-PCR, tail-PCR, electrophoresis, gene sequencing, Southern blotting and hybridization, ligation of vector and PCR product, isolation of plasmid DNA, lab on a chip, marker assisted selection.
- **Tissue Culture:** Transgenic plant development by *Agrobacterium* mediated transformation, construct development, handling of bacterial cultures, meristem culture.
- **Bioinformatics:** Data mining and sequence analysis, database similarities searches, multiple sequence alignment, phylogenetic analysis, submitting DNA sequences to the databases, DNASTAR, biostatistics, Linux and Windows operating systems, Statistical Analysis Tools: CPCS and GSTAT.