

## *Curriculum vitae*

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<http://scholar.google.com/citations?user=c1Uz3cYAAAAJ&hl=en>

### **Educational qualifications**

Ph.D. (2003-2007)  
Zoology/Biochemistry/Free Radical Biology  
Department of Zoology, Utkal University, Bhubaneswar, Orissa, India.  
**Thesis title:** “Modulation of rat testicular antioxidant defence system by experimentally induced hypo-and hyperthyroidism”

**Research Publications:** (Full Papers: 27; GenBank Submissions: 7; Abstracts: 17)

### **Publications Related to Plant Biotechnology and Plant Molecular Biology**

1. **Sahoo DK**, Sarkar S, Raha S, Das NC, Banerjee J, Dey N, Maiti IB (2015) Analysis of dahlia mosaic virus full-length transcript promoter-driven gene expression in transgenic plants. *Plant Mol Biol Rep* 33 (2): 178-199.
2. **Sahoo DK**, Dey N, Maiti IB (2014) pSiM24 is a novel versatile gene expression vector for transient assays as well as stable expression of foreign genes in plants. *PLoS One* 9(6):e98988. doi:10.1371/journal.pone.0098988
3. **Sahoo DK**, Sarkar S, Raha S, Maiti IB, Dey N (2014) Comparative analysis of synthetic DNA promoters for high-level gene expression in plants. *Planta* 240(4): 855-875.
4. Banerjee J, **Sahoo DK**, Raha S, Sarkar S, Dey N, Maiti IB (2014) A region containing an as-1 element of Dahlia mosaic virus (DaMV) sub-genomic transcript promoter plays a key role in green tissue and root specific expression in plants. *Plant Mol Biol Rep*. DOI: 10.1007/s11105-014-0766-5. (Joydeep Banerjee and **Dipak Kumar Sahoo contributed equally to this paper**)

5. **Sahoo, D.K.** and Maiti, I.B. (2014) Biomass derived from transgenic tobacco expressing the *Arabidopsis CESA3<sup>ixr1-2</sup>* gene exhibits improved saccharification. *Acta Biologica Hungarica* 65 (2): 189-204.
6. **Sahoo, D.K.**, Raha, S., Hall, J.T. and Maiti, I.B. (2014) Over-expression of the synthetic chimeric native-T-phylloplanin-GFP genes optimized for monocot and dicot plants renders enhanced resistance to blue mold disease in tobacco (*N. tabacum* L.). *The Scientific World Journal*, Volume 2014, Article ID 601314, 12 pages. DOI: <http://dx.doi.org/10.1155/2014/601314>.
7. **Sahoo, D.K.**, Stork, J., DeBolt, S. and Maiti, I.B. (2013) Manipulating cellulose biosynthesis by expression of mutant *Arabidopsis proM24::CESA3<sup>ixr1-2</sup>* gene in transgenic tobacco. *Plant Biotechnology Journal* 11 (3): 362-372.
8. Banerjee, J., **Sahoo, D.K.**, Dey, N., Houtz, R.L. and Maiti, I.B. (2013) An intergenic region shared by *At4g35985* and *At4g35987* in *Arabidopsis thaliana* is a tissue specific and stress inducible bidirectional promoter analyzed in transgenic *Arabidopsis* and tobacco plants. *PLoS ONE* 8(11): e79622.
9. Kroumova, A.B., **Sahoo, D.K.**, Raha, S., Goodin, M., Maiti, I.B. and Wagner, G.J. (2013) Expression of an apoplast-directed, T-phylloplanin-GFP fusion gene confers resistance against *Peronospora tabacina* disease in a susceptible tobacco. *Plant Cell Rep* (32): 1771-1782.
10. Kumar, D., Patro, S., Ranjan, R., **Sahoo, D.K.**, Maiti, I.B. and Dey, N. (2011). Development of Useful Recombinant Promoter and Its Expression Analysis in Different Plant Cells Using Confocal Laser Scanning Microscopy. *PLoS ONE* 6(9): e24627. doi:10.1371/journal.pone.0024627.
11. Bhattacharya, S., Ghosh, J.S., **Sahoo, D.K.**, Dey, N. and Pal A. (2010). Screening of superior fiber-quality-traits among wild accessions of *Bambusa balcooa*: efficient and non-invasive evaluation of fiber developmental stages. *Annals of Forest Science* 67(6): 611p1-p9.
12. **Sahoo, D.K.**, Ranjan, R., Kumar, A., Kumar, D., Sahoo, B.S., Raha, S, Maiti, I.B. and Dey, N. (2009). An alternative method of promoter assessment by Confocal Laser Scanning Microscopy. *Journal of Virological Methods* 161: 114-121.

**Publications Related to Biochemistry, Free Radical Biology, Endocrinology and Male Reproductive Biology**

13. **Sahoo, D.K.** and Roy, A. (2012). Compromised Rat Testicular Antioxidant Defence System by Hypothyroidism before Puberty. *International Journal of Endocrinology* 2012: Article ID 637825, 11 pages. doi:10.1155/2012/637825.
14. **Sahoo DK.** (2013) Increased germ cell apoptosis during testicular development and maturation by experimentally induced transient and persistent hypothyroidism. *WebmedCentral plus BIOCHEMISTRY* 2013; 4(12):WMCPLS00209.
15. **Sahoo DK.** (2013) Protocols for Evaluating Antioxidant Defence and Oxidative Stress Parameters in Rat Testis. *WebmedCentral BIOCHEMISTRY* 2013; 4(5): WMC004265.

16. **Sahoo DK.** (2013) Testicular Protection From Thyroid Hormone Mediated Oxidative Stress. *WebmedCentral REPRODUCTION* 2013; 4(5): WMC004252.
17. **Sahoo, D.K.** (2012). Alterations of testicular selenium-dependent and independent glutathione peroxidase activities during experimentally L-thyroxine induced hyperthyroidism and n-propyl thiouracil induced hypothyroidism in adult rats. *Research & Reviews in BioSciences* 6(3).
18. Chattopadhyay, S., **Sahoo, D.K.**, Roy, A., Samanta, L. and Chainy, G.B.N. (2010). Thiol redox status critically influences mitochondrial response to thyroid hormone-induced hepatic oxidative injury: A temporal analysis. *Cell Biochemistry and Function* 28(2): 126-134.
19. **Sahoo, D.K.**, Roy, A. and Chainy, G.B.N. (2008). Protective effects of Vitamin E and curcumin on L-thyroxine-induced rat testicular oxidative stress. *Chem. Biol. Interact.* 176: 121-128.
20. **Sahoo, D.K.**, Roy, A., Bhanja, S. and Chainy, G.B.N. (2008). Hypothyroidism impairs antioxidant defence system and testicular physiology during development and maturation. *Gen. Comp. Endocrinol.* 156: 63-70.
21. **Sahoo, D.K.**, Roy, A. and Chainy, G.B.N. (2008). Rat testicular mitochondrial antioxidant defence system and its modulation by aging. *Acta Biologica Hungarica* 59 (4): 413-424.
22. Chattopadhyay, S., **Sahoo, D.K.**, Subudhi, U. and Chainy, G.B.N. (2007). Differential expression profiles of antioxidant enzymes and glutathione redox status in hyperthyroid rats: a temporal analysis. *Comp. Biochem. Physiol. C* 146: 383-391.
23. **Sahoo, D.K.** (2011). Effects of Thyroid Hormone on Testicular Functions and Antioxidant Defence Status. *Biochemistry: An Indian Journal* 5 (6).
24. **Sahoo, D.K.** and Chainy, G.B.N. (2007). Tissue specific response of antioxidant defence systems of rat to experimentally induced hyperthyroidism. *Natl. Acad. Sci. Lett., Vol.30, No. 7 & 8:* 247-250.
25. **Sahoo, D.K.**, Roy, A., Chattopadhyay, S. and Chainy, G.B.N. (2007). Effect of T<sub>3</sub> treatment on glutathione redox pool and its metabolizing enzymes in mitochondrial and post-mitochondrial fractions of adult rat testes. *Ind. J. Exp. Biol.* 45: 338-346.
26. **Sahoo, D.K.**, Roy, A. and Chainy, G.B.N. (2006). PTU-induced neonatal hypothyroidism modulates antioxidative status and population of rat testicular germ cells. *Natl. Acad. Sci. Lett., Vol.29, No. 3 & 4:* 133-135.
27. **Sahoo, D.K.**, Roy, A., Bhanja, S. and Chainy, G.B.N. (2005). Experimental Hyperthyroidism-induced Oxidative stress and Impairment of Antioxidant Defence System in Rat Testis. *Ind. J. Exp. Biol.* 43: 1058-1067.

#### **GenBank Submissions:**

1. Maiti, I.B., **Sahoo, D.K.** and Raha, S. (2014). Binary vector pKM24KHibm8, complete sequence. GenBank Accession KF951257.
2. Maiti, I.B., **Sahoo, D.K.** and Raha, S. (2014). Binary vector pKM24KHibm10, complete sequence. GenBank Accession KF951258.

3. Maiti, I.B., Banerjee, J., **Sahoo, D.K.** and Houtz, R.L. (2013). Binary vector pKGFP::P85-P87::GUS etGFP (etGFP) and  $\beta$ -Glucuronidase (GUS) genes, complete cds. GenBank Accession KF661330.
4. **Sahoo, D.K.** and Maiti, I.B. (2013). Binary vector pKDH, complete sequence. GenBank Accession KF041008.
5. Maiti, I.B. and **Sahoo, D.K.**, (2013). Binary vector pSiM24, complete sequence. GenBank Accession KF032933.
6. Maiti, I.B. and **Sahoo, D.K.**, (2013). Binary plant gene expression vector pKM24-MD1 transgenic plasmid pKM24-MD1, complete sequence. GenBank Accession JX996118.
7. Maiti, I.B., **Sahoo, D.K.**, Raha, S. and Pattanaik, S. (2010). Binary vector pKM24KH, complete sequence. GenBank Accession HM036220.

### **Abstracts:**

1. Kroumova, A., Raha, S., **Sahoo, D.K.**, Maiti, I. B., King , B. and Wagner, G.J., 2012. Transgenic tobacco expressing a T-phyloplanin-fusion protein possess endogenous resistance to blue mold. Abs45<sup>th</sup> Tobacco Workers' Conference held on 16<sup>th</sup> to 19<sup>th</sup> January, 2012 at Williamsburg Lodge & Conference Center, Williamsburg, Virginia, USA.
2. I. B. Maiti, **D. K. Sahoo**, J. Banerjee and N. Dey, 2012. Genetic tools and gene expression vectors developed for molecular farming of pharmaceutical proteins, vaccines and recombinant antibodies, 45<sup>th</sup> Tobacco Workers' Conference held on 16<sup>th</sup> to 19<sup>th</sup> January, 2012 at Williamsburg Lodge & Conference Center, Williamsburg, Virginia, USA.
3. Pal, A., Ghosh, J.S., Rai, V., **Sahoo, D.K.**, Bhattacharya, S. and Dey, N., 2011. Screening of superior genetic resources of *Bambusa balcooa* and identification of genes involved in fiber development. National Symposium on Assessment and Conservation of Forest Genetic Resources through Biotechnological Interventions 19-20 December 2011, Ranchi, Jharkhand, India.
4. Maiti, I.B., **Sahoo, D.K.**, Kumar, D., Patro, S., Ranjan, R. and Dey, N., 2011. Development of strong recombinant hybrid promoters useful for expressing foreign genes in plants. Abs. American Society of Plant Biologists meeting, Minneapolis, USA.
5. Chainy, G.B.N. and **Sahoo, D.K.**, 2008. Modulation of rat testicular antioxidant defence system by thyroid hormone. Abs. Society for Free Radical Research – India, Satellite meeting, AIIMS, New Delhi. p.24.
6. **Sahoo, D.K.**, Roy, A. and Chainy, G.B.N., 2007. Protective effects of curcumin and vitamin E on oxidative stress caused by experimentally induced hyperthyroidism in rat testis. Abs. National Symposium on Comparative Endocrinology and Reproductive Physiology: Insights and Challenges, Visva Bharati. p.45.
7. **Sahoo, D.K.** and Chainy, G.B.N., 2007. Tissue specific response of antioxidant defence system of rat to experimentally induced hyperthyroidism. Abs. National Symposium on an Update of Reproductive Endocrinology: Novel and Applied Strategies, Varanasi. p.69.

8. Chainy, G.B.N., Roy, A. and **Sahoo, D.K.**, 2006. PTU-induced neonatal hypothyroidism modulates number and antioxidative functions of adult rat testicular germ cells. Abs. International congress on Gamete Biology: Emerging Frontiers in Fertility and Contraceptive Development, National Institute of Immunology, New Delhi. p.90.
9. Roy, A., **Sahoo, D.K.** and Chainy, G.B.N., 2006. Role of mitochondrial active oxygen metabolism in impairment of testicular function with age. Journal of The Indian Academy of Geriatrics, Vol.2, No. 4: 141.
10. Chainy, G.B.N., **Sahoo, D.K.** and Roy, A., 2006. Vitamin E is more potent than curcumin in protecting testis from oxidative stress caused due to change in lipid peroxidation, superoxide dismutase and catalase levels in L- thyroxine-induced hyperthyroid rats. In: Second Asia Pacific Forum on Andrology; 19-23 Oct. 2006, Shanghai.
11. **Sahoo, D.K.**, Roy, A. and Chainy, G.B.N., 2006. Neonatal hypothyroidism influences rat testicular antioxidant defence system. Abs. International conference on Free Radicals and Antioxidants in Health Disease and Radiation & Annual Conference of Society for Free Radical Research in India (SFRR- India), Kolkata. p.216.
12. **Sahoo, D.K.**, Roy, A. and Chainy, G.B.N., 2005. Influence of neonatal hypothyroidism on rat testicular physiology: Role of glutathione. Abs. National Symposium on Comparative Endocrinology and Reproductive Physiology: Retrospect and Prospect, Delhi. p.62.
13. **Sahoo, D.K.**, Roy, A, Chattopadhyay, S. and Chainy, G.B.N., 2005. Effect of neonatal hypothyroidism on hydrogen peroxide metabolizing enzymes in testes of rats. Abs. XXIII National Symposium on Reproductive Biology and Comparative Endocrinology, Santiniketan. p.151.
14. Chattopadhyay , S., Roy, A., **Sahoo, D.K.** and Chainy, G.B.N., 2005. Experimental hyperthyroidism-induced oxidative stress in mitochondria of liver of rats. Abs. XXIII National Symposium on Reproductive Biology and Comparative Endocrinology, Santiniketan. p.66.
15. Chattopadhyay, S., Roy, A., **Sahoo, D.K.** and Chainy, G.B.N., 2005. Thyroid hormone-induced oxidative stress in the submitochondrial particles of rat liver. Abs. International conference on Antioxidants & Free Radicals in Health-Nutrition & Radio-Protectors and IV Annual Conference of Society for Free Radical Research in India (SFRR), Bangalore. p.73.
16. **Sahoo, D.K.**, Roy, A, Chattopadhyay, S. and Chainy, G.B.N., 2005. Effect of thyroid state on hydroperoxide-metabolising enzymes of rat testes. Abs. International conference on Antioxidants & Free Radicals in Health-Nutrition & Radio-Protectors and IV Annual Conference of Society for Free Radical Research in India (SFRR), Bangalore.
17. **Sahoo, D.K.**, Roy, A, and Chainy, G.B.N., 2005. Liver Antioxidant Defence System of Rat and its modulation by Thyroid Hormone (T<sub>3</sub>). Abs. 92<sup>nd</sup> Session of the Science Congress, Ahmedabad. Animal Veterinary and Fishery Sciences. p. 40.

## Editorial Duties

Editorial board member, WebmedCentral (Category: Apoptosis, Reproduction and Endocrinology), 2013-till now.

**Experience of Peer review:**

Referee/Reviewer:

Physiologia Plantarum, Advances in Biology, Biotechnology and Genetics, Annual Review & Research in Biology, Journal of Basic and Applied Research international, African Journal of Biotechnology, Andrologia, British Journal of Pharmaceutical Research, Endocrine Metabolic and Immune Disorder-Drug Targets, General and Comparative Endocrinology, Human and Experimental Toxicology, International Journal of Agricultural Policy and Research, International Journal of Developmental Neuroscience, Oxidative Medicine and Cellular Longevity, Palgo Journal of Agriculture, Reproduction in Domestic Animals and WebmedCentral.

**Membership in Professional Societies:**

1. Society for In Vitro Biology (2013).
2. American Society of Plant Biologists (2011-2012).
3. Indian Society for Comparative Endocrinology (2005-2007).