

Curriculum Vitae

1. Name of the Applicant : **Dr. Seema Rai**
 2. Father's Name : **Shri RAM NARAIN RAI**
 3. Husband's Name : **Shri PREM NATH KAMLESH**
 4. Date of Birth : **27th August 1972**
 5. Mailing Address : **Dr. Seema Rai**
Department of Zoology
Guru Ghasids Vshwavidyalaya
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6. Educational qualification:

Graduate B. Sc. (Hons)	Magadh Mahila College, Patna			Patna University, Patna
M. Sc.		II nd	55.22	Faculty of Science Deptt. Zool.
Doctorate Ph. D. 2004	Topic: Immunomodulatory role of melatonin and thyroxin in seasonally breeding vertebrate, <i>Funambulus pennanti</i> .			Deptt. of Zoology Banaras Hindu University, Varanasi.
Other : i. GATE 2002	Life Science	Percentile=76.45		
ii. BHU- RET 2000	Zoology			

7. Other Qualification Fellowship:

- **BHU-RET 2000,**
- **GATE 2002 (Life Sciences), Percentile 76.45**
- **UGC-JRF 2002 (Project)**

8. Research and Awards: I. Publication (s) International: (09); National: (10); Book: 01

8.1 International Publication

1. **Rai S,** Haldar C (2011) Melatonin ameliorates oxidative stress and induces cellular proliferation of lymphoid tissues of a tropical rodent, *Funambulus pennanti*, during reproductively active phase. *Protoplasma* (DOI: 10.1007/s00709-011-0367-1); I F..... 1.9

2. E. Turkowska, **S. Rai**, P. Majewski, K. Skwarlo-Sonta (2013): Melatonin impact into the diurnal and seasonal changes in *IL-6* and *IL-18* gene expression in blood leukocytes of male *Gallus domesticus* with experimental peritonitis. **Journal of Animal and Feed Sciences** **IF**.....**0.9**
3. **Rai S**, Haldar C, Singh R (2009). Modulation of immunity in on immune function(s) of young adult and aged squirrel, *Funambulus pennanti*. by melatonin and p-chlorophenylalanin. *Immunity and Ageing*. **6: 5 (open access); I F**.....**3.4**
4. C. Haldar, S. S. Singh, & **Seema Rai (2006)** Melatonin and differential effect of L-thyroxin on immune system of Indian tropical bird, *Perdica asiatica* ,**Gen. Comp. Endocrinol** **145, 215-221** I F..... **3.108**
5. **Seema Rai**, Chandana Haldar, S. S. Singh (**2005**) Trade-off between L-thyroxine and melatonin in immune regulation of Indian palm squirrel, *Funambulus pennanti* during the reproductively inactive phase.**Neuroendocrinology**,**82,103-110; I F**.....**4.65**
6. C. Haldar, **S. Rai**, R Singh (**2004**) Melatonin blocks dexamethasone induced immunosuppression in a seasonally breeding rodent Indian palm squirrel, *Funambulus pennanti*. **Steroids**, **69, 367- 377** I F.....**3.1.905**
7. **Rai Seema** and Haldar Chandana (**2003**) , Pineal Control of immune status and hematological changes in blood and bone marrow of male squirrels (*Funambulus pennanti*) during their reproductively inactive phase. **Comp Biochem & Physiol**, **136, 319-328. I F****2.85**

8.2 National Publication

8. C Haldar, Ahmad R **Rai S**, S. Lahiri, S Sharma and S Gupta (2012):Seasonal and experimental day length in regulation of melatonin and immunity in Indian tropical mammal. In: Treatise on Photophysiology. Eds. Haldar C and Basu P, Chapter 9; pp 173-191.(Imagination Publisher, India, ISBN -978-81-921414-1-1).
9. Sanjukta Lahiri, **Seema Rai**, Chandana Haldar (**2006**). Trade off relation between melatonin and gonadal steroid on melatonin receptor (Mel 1a R) expression on lymphoid tissue. *Jour. Endocr. Res.* **1: 62-65**.
10. **Rai Seema** and Haldar C. (**2006**): Adaptive significance of annual variation in immune parameters and endogenous hormones (melatonin and thyroxine) of tropical rodent *Funambulus pennanti*. *Jour Endocrinol. Res.* (SRBCE Silver Jubilee Commemoration Volume) pp 2: 111-116
11. C. Haldar, S. Gupta and **S. Rai.** (**2012**): Response of clock genes (PER1 and CRY1) and Melatonin receptor (MT1) in Suprachiasmatic Nuclei (SCN) of a Tropical Rodent, *Funambulus pennanti*, to exogenous melatonin administration. *Jour Ender Res* (in Press)

8.3 Review Articles & Chapters Published in International and National Book

12. Haldar C, Singh S S, **Rai S**, Skwarlo Sonta K, Singaravel M (2008). Melatonin and immune modulation: Involvement of Neuroendocrine Network. Review Article. In: (Eds) C. Haldar, M Singaravel, S. R. Pandi-Perumal, D P. Cardinelli., Experimental Endocrinology and Reproductive Biology .pp 297-314. Amazon.com)- ISBN 978-1-57808-518
 13. Haldar C, **Rai S**, Gupta S, Ahmad R. (2011) Pineal Gland and Circulatory Melatonin in Regulation of Immune Status of Seasonally Breeding Mammals in “*Eco-immunology*” eds Nelson and Demas Oxford Publisher link - ukcatalogue.oup.com/product/9780199737345.do - United Kingdom – “Eco-Immunology” Edited by Gregory Demas and Edited by Randy Nelson Oxford Univ Pres USA.(Chapter -9, pp 326-359)
 14. Haldar, & **S. Rai** (2007). Melatonin and immunomodulation in seasonally breeding mammals. Review Article. In: Hormone Biotechnology, Eds: Prof. S. K. Maitra, Daya Publishing House. pp 189-211
 15. Haldar, & **S. Rai**. (2006). Melatonin and Endocrine Regulation of Immune Function. (Review Article) *Frontiers of Molecular Endocrinology (FME) Hyderabad* (25-33).
 16. C. Haldar, & **S. Rai** (2006): Immunomodulatory role of melatonin: Relationship with bone marrow macrophages and lymphocyte. Review Article, Proc. zool. Soc. Calcutta, 59 (1) 87-104.
- 8.4. Publications in Proceedings of Conference:
17. **Rai Seema**, Haldar, C. (2002): Effect of melatonin administration on Hematological changes in peripheral blood and bone marrow in Indian palm squirrel, *Funambulus pennanti*. Proceeding of XX SRBCE, Tiruchi.pp-77-78.
 18. **Seema Rai**, Chandana Haldar, Rajesh Singh, Ravindra Mishra (2002): Involvement of thyroid gland and melatonin in immunomodulation of Indian palm squirrel, *Funambulus pennanti* during winter months. **Proceeding of third international symposia of Indian Pineal Study Group (IPSG). Pp 99-120.**
 19. **Rai S**, Haldar C (2006). Immunoprotection by melatonin in Indian palm squirrel, *Funambulus pennanti*. National symposium on current trends in pineal research and IVTH IPSG meeting at Raipur, India, from 05-07 October,2006.

9. Book Author: One

Rai S (2011): *Neuroendocrine Network and Immune-regulation*. ISBN 978-3- 8443-1762-6 Lap Academic Publishing GmbH & Co. KG, Dudweiler Landstraße 99 D - 66123 Saarbrücken, Germany. (Book Author)

10. Conference Paper Presentation: (20)

10.1. National Conference: (13)

1. **Seema Rai**, Chandana Haldar, Shweta Sharma (2010): Melatonin ameliorates splenocytes damages caused by high LET carbon ion radiation: an *in vitro* study. National Workshop on Interaction of Ionising Radiation With Biological System UGC-DAE consortium for Scientific Research Kolkata & Department of Zoology, Viswa Bharati, Santiniketan 29- 30 March, 2010
2. **Rai Seema**, Haldar Chandana and Cosentino Marco (2008): Cross talk between melatonin and acetacholamines in human lymphocytes and its involvement in immune regulation. SRBCE 2008, Department of Animal Sciences, Tiruchirapalli.
3. **Rai S**, Haldar C (2007). Age dependent effect of p chlorophenylalanine and melatonin on immune parameters of seasonally breeding rodent, *Funambulus pennanti*. In XXIV National “Symposium on Reproductive Biology and Comparative Endocrinology” from 15-17 Jan 2007 at University of Kerala, Trivandrum.
4. **Rai S**, Haldar C (2006). Immunoprotection by melatonin in Indian palm squirrel, *Funambulus pennanti*. National symposium on current trends in pineal research and IVTH IPSPG meeting at Raipur, India, from 05-07 October,2006.
5. **Seema Rai** and Chandana Haldar (2005): Effect of L- thyroxin and melatonin on immune parameters in relation with blood and bone marrow of Indian palm squirrel, *Funambulus pennanti* during reproductively inactive phase. XXIII National “Symposium on Reproductive Biology and Comparative Endocrinology” from 7-9 Feb.’2005 at Shantiniketan, Vishwa Bharati, West-Bengal, Kokotta, India.

6. **Seema Rai and Chandana Haldar (2005):** Effect of melatonin and IL-1 on thymocyte and splenocyte proliferation *in vivo* and *in vitro* in a seasonally breeding rodent Indian Palm Squirrel, *Funambulus pennanti* National Society for Comparative Endocrinology from 17-19 Nov 2005 at Deptt. of Zoology, University of Delhi, Delhi, India
7. **Seema Rai and Chandana Haldar (2005):** Daily variation of immune parameters of blood and bone marrow cells in correlation with pineal melatonin of a tropical rodent, Indian palm squirrel, *Funambulus pennanti*. XVII National Symposium on Chronobiology from 1-3 October, 2005, at Department of Zoology, BHU, Varanasi, India.
8. **Seema Rai and Chandana Haldar (2004):** Pineal Melatonin: free radical scavenger and immunomodulator in Indian palm squirrel, *Funambulus pennanti*. XXII National “Symposium on Reproductive Biology and Comparative Endocrinology” from 26-29 Jan.’2004 at Taramani, Madras University, Chennai, India.
9. **Rai S, S. S. Singh and Haldar C. (2003):** *In vitro* effect of melatonin and IL-1 (produced by peritoneal macrophages) on splenic and thymic lymphocyte proliferation of *Funambulus pennanti* (Indian Palm Squirrel). XXI Symposium of the Society for Reproductive Biology and Comparative Endocrinology (SRBCE), Banaras Hindu University, Varanasi,
10. Chandana Haldar and **Seema Rai (2002):** Immunomodulatory role of melatonin in Lower Vertebrate. on “National Colloquium on Catfishes Physiology” Nov, 19-20, 2002 at Department of Zoology, Banaras Hindu University, Varanasi, India.
11. **Seema Rai, & C. Haldar (2002):** Pineal Control of Hematological Changes in blood and bone marrow of Indian rodent, *Funambulus pennanti* in “IIIrd Indian Pineal Study Group” from 1-3 March 2002 at Bareilly.
12. **Rai Seema. Haldar, C. (2002):** Effect of melatonin administration on Hematological changes in peripheral blood and bone marrow in Indian palm squirrel, *Funambulus pennanti*. Proceeding of XX SRBCE, Tiruchirapalli, India, 7-9 Jan, 2002
13. **Rai, Seema, R. K. Mishra & Haldar C. (2001):** Seasonal Circadian Rhythm of Melatonin, Hematological Parameters and its correlation with Immune Status of Indian Palm Squirrel *Funambulus pennanti*. Symposia on Recent Trends in Life Sciences and Biotechnology” from 20-22 Nov’ 2001, Mumbai.

10.2 International Conferences: (07)

1. **Seema Rai** and Chandana Haldar (2012): Melatonin receptor expression in lymphoid organs of Indian Palm Squirrel, *Funambulus pennanti*, following steroid administration. 21st International Symposium on “Molecular and Physiological Aspect of Regulatory Process of the Organism at Jozef Dietl Malopolska Higher School in Cracow, Poland .June 14-15, 2012
2. **Rai Seema**, Haldar Chandana and Cosentino Marco(2009): Crosstalk in melatninerpic and chetacholaminergic system regulating human T regulatory and T effector cells. IX Congress of European Biological Rhythm Society at Strasbourge, France during, 22- 28 Aug 2009.
3. **Rai Seema**, Haldar Chandana and Cosentino Marco (2009): Melatonin and catecholamine in regulation of human lymphocyte. International Conference and meeting of SRBCE, 2009 at University of Hyderabad, India
4. **Seema Rai** and Chandana Haldar (2008): Reproductive phase-dependent variation in immune function (s) of tropical seasonal breeder, Indian Palm squirrel *Funambulus pennant*: Involvement of endogenous melatonin and thyroxin. 4th Asia Oceania Conference on Photobiology, 24th-26th Nov, 2008
5. **C Haldar**, S Gupta, S. S. Singh, S. Rai and S Lahiri (2008): Photic regulation of per1, cryl and mt1a gene expression in SCN of a seasonally breeding rodent, *F. pennant*. 4th Asia Oceania Conference on Photobiology, 24th-26th Nov, 2008
6. **Rai Seema**, Haldar Chandana and Cosentino Marco (2008): Endogenous melatonin and Catecholamine(s) in Human lymphocytes: Involvement of IL-2/IL-2 Receptor. In International Conference and Humboldt Kolleg Meeting, Department of Physics, BHU, Varanasi 17-19 Nov, 2008
7. **Rai Seema** and Chandana Haldar (2005): Immunomodulation by melatonin in seasonally breeding rodent, *Funambulus pennanti*. International Conference and Humboldt-Kolleg, SCPCBGM from November 28-30, 2005 at Department of Physics, BHU, Varanasi, India.

11. Invited Talk: 6

1. **Seema Rai**, Chandana Haldar, Shweta Sharma (2010) National Workshop on Interaction of Ionising Radiation With Biological System organized by UGC-DAE consortium for Scientific Research Kolkata & Department of Zoology, Viswa Bharati, Santiniketan during 29- 30 March, 2010
2. **Seema Rai (2010)** Cell, Immunity and Ageing, As mentor in INSPIRE programme by DST held in Guru Ghasidas Viswavidyalaya, Bilaspur, GC.....22.06.2010
3. **Rai Seema (2012)**. Regulation of immune function (s) in a seasonally breeding vertebrate, *Funambulus pennanti* : Role of pineal melatonin Faculty of Biology, Department of Animal Physiology, University of Warsaw, Poland.....10.05.2012
4. **Rai Seema (2012)**. “Impact of exogenous melatonin and thyroxine on immune status of a seasonally breeding vertebrate, *Funambulus pennanti* .” at The Institute of Genetics and Animal Breeding, Polish Academy of Science (PAS) to meet with Prof. Bozena Olszanska, working on the embryonic development of the pineal gland in Japanese quail..... 25.05.12
5. **Rai Seema (2012)**. “ Exogenous melatonin and steroids modulates immune status of a seasonally breeding vertebrate, *Funambulus pennanti* .” Visited to the Institute of Physiology and Animal Breeding Polish Academy of Science (PAS), Jablonna, Warsaw, to meet with Prof. Tomasz Misztal, working on role of melatonin in the seasonality of reproduction in Sheep.....26.06.12

12. PROJECTS AWARDED (PDF)

Name of the Funding agency	Designation	Duration	Total Cost	Status
Council of Scientific and Industrial Research (CSIR) New Delhi	POOL OFFICER	Apr 2009- Mar 2012	Rs. 21000/- plus usual allowances (HRA & DA) Total Rs. 35,820/- pm	Leave of one year.
Deptt of Clinical & Experimental Pharmacology, Univ of Insubria, Varese Italy	Research Scientist	May 2007- Apr 2008	Rs 20,00,000/- Fellowship 2000 Euro/pm (Fixed)	One year Invitation PDF and Completed
Department of Science and Technology	DST-SERC Fast Track Young Scientist	Awarded in Sept 2005, Started w. e. f April 2006, March 2009	Rs 12, 72,000/- Fellowship Rs. 20,000/-	Completed

13. Details of Project: Principal Investigator/ Group Leader

S N	Title of Project	Funding Agency	Worth in Lakhs	Sanction Letter no with date	Duration of Project	Status of Project Completed/ ongoing
1.	“Neuroendocrine modulation of lymphocyte function in albino rat <i>Rattus norvegicus</i> : Role of endogenous melatonin and catecholamine”	UGC, New Delhi	11,73,800/-	F. No. 41-94/2012 (SR) dated 13. July 2012	3 years	ongoing
2.	Melatonin receptor (mt1/mt2) expression following steroid (adrenal/gonadal) induced toxicity in lymphocytes (blood & spleen)	(UGC BSR Research Start up Grant)	6,00,000/-	No. F. 20-1/2012 (BSR)/ 20-3 (3)/2012 (BSR)	One year	ongoing
3.	DBT- under Boost to University Interdisciplinary Life science (Biotechnology, Botany and Zoology) Departments for Education and Research BUILDER (Action of melatonin on ovarian free radical load and cytokine(s) secretion in normal as well as experimentally induced anovulatory condition in rat: An <i>in vivo</i> and <i>in vitro</i> study).	DBT	4.5 crores (Rs 1.5 to each group leader)	Email dated	Five year	Sanctioned in March 2012

14. Teaching Experience at University or Recognized College of Higher Education

Name of the Institution	University	Designation	Year of appointment	Class Taught UG / P G	Length of experience (Year/ Months)	
Department of Zoology	Guru Ghasidas Viswavidyalaya, Bilaspur, CG	Asstt Professoor	2009	UG and PG	Four years	
Department of Zoology	Banaras Hindu University Varanasi	Young Scientist Fast Track DST-SERC	Temporary	Under Graduate	Three Acad. Session	
National College Danapur	Magadh University Gaya, Bihar	Lecturer	Ad Hoc	Under Graduated	July 95	Feb 96
Patna Central School	CBSC Board	TGT (Science)	Permanent	10 + 2	25 Feb 97	Nov' 97

15. Administrative –Experience, if any

Name of the Institution /Department	Designation	Nature of post	Nature of assignment	Period (Give date)	Length of experience
Girls Hostel, Guru Ghasidas Vishwavidyalaya	Assitant Warden,	Administrative	Term wise	September 2009- till date	Four yeara
Deptt Zoology, GGV, Bilaspur	Acting In-charge	Administrative	--	26.05.2010- 11.06.2010	18 days.
Indian Pineal; Study Group (IPSG)	Secretary Treasurer	Financial Administration	Contractual	Nov 2006	One and a half year

16. FELLOWSHIP, AWARDS AND HONOURS

1. Member Executive Council, GGV 2013
2. INSA Visiting Scientist under International Exchange Programme 2012
3. Commonwealth Academic Staff Fellowship Award by UGC for year 2012
4. Awarded for Senior Research Associate under Pool Scientists' Scheme Council of Scientific and Industrial research CSIR, NEW DELHI in April 2009.
5. Asstt. Editor in Chhattisgarh J of Science & Technology 2010.
6. Young Scientist (YS) Award –Department of Science and Technology DST-SERC- Fast Track 2005 (2006-2009).
7. European Invitation Fellowship 2007 to work at University of Insubria, Varese Italy.
8. Qualified Research Entrance Test BHU, 2000
9. GATE 2002, 76.44 Percentile, Life Sciences

10. IIIrd prize for Oral Presentation in 3rd International IPSPG, IVRI, Bereilly, Izatnagar 2002.
11. Junior Research Fellowship- UGC (2001-2005)
12. Young Scientist Award -DST-SERC- Fast Track 2005 (2006-2009)
13. NJ Chinoy Award For Best Oral Presentation in 27th International Conference for Reprod Biol Comp Endocrinol, Hyderabad.
14. Awarded for Senior Research Associate under Pool Scientists' Scheme CSIR, NEW DELHI in April 2009.
15. Awarded Travel Grant By CSIR to avail FUL AIR FAIR to attend and present paper in IX Congress of European Biological Rhythm Society at Strasbourg, France during 22- 28 Aug 2009.
16. Best Post Presentation Award in IX Congress of European Biological Rhythm Society at Strasbourg, France during 22-28 Aug 2009.
17. Delivered SIX *Invited talk* at National and international palteform

17. OTHER ACCOMPLISHMENTS:

- 1. Convener , National Symposium on Zoological Sciences: Recent Challenges and its application in Medical Research during 3-4 February, 2012**
- 2. Hostel Warden ~ Since 2009 September till dAte**
- 3. Head In-charge Deptt of Zoology, G G V, Bilaspur**
- 4. Established Department of Zoology at Guru Ghasidas Vishwavidyalaya, Bilaspur**

Name: Dr. Seema Rai

Place: Bilaspur