

Profile
HIRENDRA NATH SARMA

Date & Place of Birth: 01-July-1962, India

Professional Position: **Professor**, Department of Zoology, Rajiv Gandhi University, Rono Hills, Itanagar – 791 112, India

Designation: Professor of Zoology

Academic Qualifications:

B.Sc Honours	1983 : First class :	Chemistry/Zoology/Botany Gauhati University, India
M.Sc (Zoology)	1987 : First class :	Zoology, Gauhati University, India
Ph.D. (Zoology)	1998 :	Gauhati University (1993-1998).
NET for JRF and Lecturership,	1989 :	UGC-CSIR, New Delhi, India

Area of Research interest:

Cell molecular studies on female reproduction in laboratory model system (rat/mice): Natural product as reproduction modulator, isolation of phytocompound (phytosteroids) and study on its mechanism of action through ER / PR during female reproductive cycle, implantation, decidualization, growth of embryo; possibility of its use as agonist and/ or antagonist of H-P-G hormones. Effects of natural products on ovarian follicular development and recruitment; subsequent programmed cellular response of uterine tissues for receptivity and embryo development. Natural products' docking studies with human estrogen and progesterone receptors.

Eastern Himalayan Biodiversity studies in Arunachal Pradesh. Survey and documentation of traditional medicines (TM) and knowledge associated on practice of TM especially for Reproductive health; study of high altitude ecology of Arunachal Pradesh.

Professional honors, Awards, Fellowships and Post Doctoral Training:

- 1999 : **SERC visiting Fellowship**, awarded by Department of Science & Technology, Government of India. Fellowship availed in Molecular Reproduction Development and Genetics (MRDG), at Indian Institute of Science, Bangalore (April – June, 2000).
- 2001 : **Biotechnology Overseas Associateship**, awarded by Department of Biotechnology, Government of India, Fellowship availed in the Department of Pediatrics Endocrinology, Reproductive Sciences Program, University of Michigan, USA (March, 2002 – February, 2003).
- 2003 : **Post Doctoral Fellowship in** the Reproductive Sciences Program, University of Michigan, USA, under Prof. Vasantha Padmanabhan (March 2003 – August, 2003).
- 2007: Appointed subject expert by Union Public Service Commission New Delhi, from 3rd Oct., 2007 to 5th Oct., 2007. DO. NoF. 1/16/2007-ER-I.
- 2009: Charles Darwin Gold Medal 2009, for distinguished contribution in research in

the field of Life Science, awarded by International Society for Ecological Communication, India.

- 2009 **Commonwealth Post doctoral Fellowship**, awarded by Commonwealth Scholarship Commission, United Kingdom ; availed in the Institute of Reproductive and Developmental Biology (IRDB), Imperial College, London (October, 2009 – March, 2010).
- 2016 : **Member of the Planning Board of Assam University**, Silchar, nominated by President of India as Visitor's nominee for a period of three years (2016 – 2019).
- 2018: **External Member, Board of Post Graduate Studies**, Department of Zoology, Assam University, Silchar.
- 2018: **Appreciation letter from His Excellency**, Governor of Arunachal Pradesh as performing painstaking work on digitalization of a old manuscript on traditional medicine of Tai Khamti of Arunachal Pradesh
- 2018: **Member, "Swachhta Ranking Inspection Team"** by UGC and AICTE; Inspected two Universities on 15th September, 2018.
 (1) Assam Science and Technology University, Jalukbari, Guwahati-781013
 (2) K. K. Handiqui State Open University, Guwahati, Assam
- 2021 **Subject Expert** for recruitment of Faculty in the Department of Zoology, Cotton University, Guwahati, Assam
- 2021 External Member of Board of Studies for UG and PG course of Zoology, Nowgong (Autonomous) College, Assam

Academic appointments :

- 1988-1990 : Lecturer of Zoology, Goalpara College, Assam,
 1990-1997 : Lecturer of Zoology, Arya Vidyapeeth College, Guwahati , Assam
 1997-2003 : Assistant Professor of Zoology, Rajiv Gandhi University, Itanagar,
 2003-2009 : Associate Professor of Zoology, Rajiv Gandhi University
 2009- present : Professor of Zoology, Rajiv Gandhi University
 2012- present : Coordinator, (appointed by University Grants Commission, New Delhi)
 Center with potential for Excellence in Biodiversity

Administrative Experiences:

- 2003-2006, 2012-15: Head of the Department of Zoology, Rajiv Gandhi University, Itanagar
 2004-2005: Chairman: Establishment of Faculty of Engineering in Rajiv Gandhi
 2009-2012: Dean Faculty of Life Science, PS, IT & ET, Rajiv Gandhi University, Itanagar
 2012- present: Coordinator, Center with Potential for Excellence in Biodiversity, RGU
 2003- 2015: Member, Academic Council and Research Board, RGU
 2003-2006; 2012-2015: Chairman, Board of Under Graduate & Post Graduate studies, Department of Zoology, RGU
 2013 : Chairman, Board of Studies for Advance Post Graduate Diploma in Biodiversity
 2016- present : Member, University court, RGU
 2018- 2nd July – 3rd August: Member, Executive council, RGU

Courses teaching in UG & PG:

- 1988 – 1997: Teaching under graduate (Zoology Honours) students : Developmental

	Biology & Endocrinology, Cell & Molecular Biology, Biochemistry & Animal Physiology
1997 – present In Charge :	Teaching Post Graduate (M.Sc in Zoology) students : Special paper in Zoology :Molecular Endocrinology & Reproductive Biology, Developmental Biology, embryonic origin & differentiation of Reproductive organs, Endocrine organs & hormones, Hypothalamus-Pituitary-gonadal structure & interrelationship, Reproductive techniques, Cell signaling, gamete biology
2010 – Present	Ph.D. course work and M. Phil classes in Zoology

Course under Center with Potential for Excellence in Biodiversity:

2013	: Chairman, Board of Studies for Preparation of Syllabus for Advance Post Graduate Diploma in Biodiversity
2013– 2019	Coordinator and in-charge of Advance Post Graduate Diploma in Biodiversity (Theory, practical and field training) under “Center with Potential for Excellence in Biodiversity”.

Research Projects:

2006 – 2008	In vivo validation and toxicological evaluation of herbal preparations for abortifacient property used by Adi women of Arunachal Pradesh (DST): Supervised under DST Women Scientist Programme, Govt. of India.
2006 – 2009	In-Vivo testing of traditional herbal preparation for anti reproductive effect used by indigenous women of Adi tribe of Arunachal Pradesh (DST). Supervised under DST Women Scientist Programme, Govt. of India.
2008 – 2012	Developing a digitized database on medicinal plants used as food in north east Region (DBT)
2012 – 2019	Validation of Traditional herbal products for Reproduction regulation (UGC) (Under the Grant of Center with Potential for Excellence in Particular Area (Biodiversity))

Collaborative Research :

Signing of Memorandum of Understanding (MoU)

1. 2013 - 2018
 - (i). Prof. D. Velmurugan, Department Crystallography and Biophysics (Center of Advance Studies), University of Madras, Guindy Campus, Chennai. India
 - (ii). Prof. Vasantha Padmanabhan, University of Michigan, 1150 West Medical Center Drive, 7510 MSRB I, Ann Arbor, MI 48109-5718, USA
 - (iii). RIWATCH, Roing (Arunachal Pradesh) Research on Traditional Medicines and its practice among the Tribal communities of the state.

Supervising Students for Ph.D. (Degree awarded & ongoing) :

- 2006 Study of *polygonum hydropiper* linn. root extract on fertility regulation in female albino rat (awarded)
- 2010 A study on endometrial protein and hepatic enzymes in response to traditional herbal preparation for abortifacient effect (awarded)
- 2010 Study of phylogeographic and genetic variation of *Papilio polytes* (lepidoptera: papilionidae) in eastern Himalayan biodiversity hot spot of Arunachal Pradesh (awarded)
- 2010 A study on effect of Tamoxifen on expression of endometrial protein and Transforming Growth Factor- β (I & II) in albino rat uterus (Awarded).
- 2010 Study on expression pattern of Vascular Endothelial Growth Factor (VEGF) in uterine tissues and fetal-maternal interface during periimplantation in albino mice (Awarded).
- 2011 Effect of *Polygonum hydropiper* root extract on endometrial protein expression during pre and post implantation period in female albino rat (awarded)
- 2011 Experimental validation of fertility regulation and toxicological effect of crude root extract of *Piper L.* on female albino rat (awarded)
- 2012 Study on effect of estradiol-17 β and progesterone on insulin like growth factor (IGF) expression during pre and post implantation period in female albino rat (awarded)
- 2012 A Study on the status assessment of the Higher Vertebrates in Talley Valley Wild Life Sanctuary, Arunachal Pradesh (Awarded).
- 2012 Inhibitory efficacy of selected medicinal plant extract on testosterone induced benign prostatic hyperplasia in albino rat (awarded)
- 2013 Expression of vascular endothelial growth factor receptor-2 (flk-1/kdr) during periimplantation period in albino mice uterus (Awarded).
- 2013 A study on effect of *Scoparia dulcis* leaf extract on expression of endometrial Insulin-Like Growth Factor-II (IGF-II) and decidualization during periimplantation in albino mice (Awarded).
- 2014 A Study on ovarian steroid independent protein expression during periimplantation in mice uterus (Awarded).
- 2014 Study on effects of *Scoparia dulcis* Linn. extract on HOXA10 expression in mice uterus during periimplantation period (Submitted)
- 2017 Effect of *Cynoglossum zeylanicum* Lehm. Root bark extract on fetal maternal tissue and expression of Vascular Endothelial Growth Factor (VEGF) during early gestation in mice (on going)
- 2018 Study on effects of phytochemicals on embryo development and fetal-maternal cellular proliferation during early gestation (d4-d7) in mice. (On going)
- 2018 Study on effects of natural phytochemicals on spatio-temporal expression of Wnt in fetal-maternal tissue during peri implantation (D4-D7) in mice (On going)
- 2019 A study on molecular mechanism of action of phytosteroids from *Cynoglossum zeylanicum* through estrogen and progesterone receptors in fetal maternal tissue (d1 – d7) of mice embryo development (On going)
- 2019 Study on molecular mechanism of action of phytosteroids from *Dysozylum alliarium* mediating ovarian steroid receptors pathway during mice embryo development (d1 – d7) (On going)

Supervising Students for M.Phil Degree:

- 2012** Species diversity, population density and major threats to birds in Papum Pare districts in Arunachal Pradesh (Awarded).
- 2016** Study on Estrogenic Effect of *Cynoglossum zeylanicum* root extract in mice uterus and in silico analysis of chromatographic fractions for estrogen receptors binding affinity (awarded).
- 2019** A study on steroidogenic property of root extract of *Lasia spinosa* and its effect on uterus and ovary of female albino mice (Awarded).

Book Published:

- 2008** : 1. Traditional Medicines of Arunachal and Assam : Practice and Prospect, Supratik Publisher, Guwahati.
- 2017** : 2. Traditional Medicines of Tai Khamti of Arunachal Pradesh (Editors). ISBN :978-81-287-0027-9. (A digitized manuscript, edited and published) ; Scientific Book Center, Guwahati, 2017
- 2018**: 3. Food Plants as Medicines : An eternal panacea : ISBN: 978-81-287-0028-6., Scientific Book Center, Guwahati, 2
- 2018**. 4. Butterflies of Arunachal Pradesh. ISBN: 978-81-287-0027-9. Scientific Book Center, Guwahati, 2018
- 2018**. 5. Discovering Eastern Himalaya: The Arunachal Pradesh: West Kameng and Tawang. ISBN: 978-81937-3276-2, South Asian Publication, Guwahati, 2018.

Book Chapters published:

1. **H. N. Sarma**. Traditional Medicines: A Rendezvous for Therapeutics in Global Perspective. **2013**. In. Understanding North East Region of India. Eds. Tamo Mibang & Lisa Lomdak, Himalayan Publisher. ISBN., 81-86393-87-0, Pp. 109-120.
2. Luk Bahadur Chetry, **H. N. Sarma** and Manuj Bharali. Benign Prostatic hyperplasia: A Therapeutic Approach. **2019**. In. Current Research in Biology. Ed. Dr. R. Raveen. Vol – 1. Akinik Publications, New Delhi. ISBN-978-93-5335-315-5 Pp. 83-98.
3. **Hirendra Nath Sarma**. Folklore: Societal Knowledge, culture and development in Arunachal Pradesh. **2020**. In: Folklore of Northeast India. Editor. Prof. Tamo Mibang. Himalayan Publishers: New Delhi-Itanagar. ISBN: 978-81-86393-04-8. pp. 126-151.
4. Upasa Gowala and **Hirendra Nath Sarma**. 2021. A Review on *Cynoglossum zeylanicum*: Properties and Pharmacological Significance. In. Research Trends in Medicinal Plant Sciences. Vol.10 Akinik Publications. New Delhi. ISBN: 978-93-90846-63-4. Book DOI: <https://doi.org/10.22271/ed.book.1211>. Pp. 13-24.
5. Indira Sarma and **Hirendra Nath Sarma**. **2021**. Implantation: Decoding the molecular determinants of embryonic attachment. In. Advances in Animal Research. Editor. Dr. Jugabrat Das. Global Net Publications, Ansari Road, Daryagange, New Delhi – 110 002. Pp.84 – 93. ISBN:978-93-91166-56-4
6. Krishnakshi Mishra and **Hirendra Nath Sarma**. **2021**. Understanding the Efficacy of *Dysoxylum alliarum*: A Plant Traditionally used for Female Reproduction Regulation. In. Traditional Medicinal Plants. Vol. 4. Ed.P. Shivakumar Singh. Akinik Publications, 169, C-11, Sector - 3, Rohini, Delhi-110085, India. ISBN: 978-93-91538-77-4. DOI: <https://doi.org/10.22271/ed.book.1321>

Report Publication: Center with Potential for Excellence in Biodiversity: Rajiv Gandhi University: Final Report: 2012-2018. Year of Publication, 2018

Editor in Chief :

2014 – 2020 **1. “Journal of Bioresources” [ISSN 2394-4315 (print); 2582-2276 (Online)]** a half yearly peer reviewed **UGC-CARE** quality Journal published by the “Center with Potential for Excellence in Biodiversity”, (CPEB-II) RGU. Available on line: www.jbr.rgu.ac.in

2014 – 2018 **2. Biodiversity News Letter**, A quarterly published News Letter of CPEB-II.

National Seminar/ Symposium/ Workshop organized in RGU:

2003 National Workshop on Biodiversity Research: Challenges, strategies and future prospect. Organizing secretary, Rajiv Gandhi University (Formerly Arunachal University).

2006 National Seminar on Biodiversity and Indigenous Knowledge. Organizing Secretary, Rajiv Gandhi University (Formerly Arunachal University).

2013 Workshop on :Molecular structure determination using x-ray crystallography - theory and hands on experience.

2013 Organizing Secretary: National Seminar on :Bioresource Utilization and Biodiversity Conservation

2014 Organize workshop on: Hand on training on 2D SDS-PAGE and data analysis

2016 Director, International conference on “ Global Biodiversity, Climate Change and Sustainable Development” Organized by Center with Potential for Excellence in Biodiversity, Rajiv Gandhi University

Visiting Faculty:

2010 Tezpur University : Series of lectures including (i). Prenatal exposure to Environmental & Native Steroids: Potential benefits and hazards in Reproductive Health

2011 Gauhati University : Series of lectures including (i) Animal Model System for Reproduction Research : Insight in Molecular Reproduction; (ii) Modern Approach to Reproductive Health : Prospect of new Drug from Natural Product; (iii) Ligand binding and functional correlation between gonadotropin receptors (hLHR & hFSHR) in HEK 293 cells

2012 Dibrugarh University : Series of lectures on Endocrinology & Reproductive Physiology

2013 Gauhati University : Lectures in Biochemistry and Reproductive Physiology.

2014 Gauhati University : Lectures on Reproductive Physiology

Invited Lectures in National & International Seminars/ Orientation/Refreshers Course program of UGC :

2011 Assam Agricultural College, Biswanath Chariali: Lead lecture entitled “Phytosteroids from plant Bioresource in North East India: An Emergent area of drug development for Reproductive Health”

2012 Institute of Advance Studies in Science & Technology : Reproductive Health : Bridging Biotechnology and indigenous knowledge.

2012 Assam University : Plenary lecture entitled “Reproductive Health and potential bioresource in North Eastern India”

- 2013 Key note address in National Seminar, D. K. College, Guwahati : “Prospect of drug development for Reproductive Health from medicinal herbal resources of North east India”.
- 2015 Key note address in National Seminar, Pub Kamrup College, Assam : “Animal Biotechnology : Understanding gene function during early embryo development.
- 2016 Delivered lectures in Orientation Program at University of Goa (4 – 5 July, 2016) : (i). Eastern Himalayan Biodiversity, (ii). Ecology of Eastern Himalayan region, (iii). Tribal Community and Biodiversity conservation in A.P. (iv). The Brahmaputra valley : Biodiversity, People and culture.
- 2016 Delivered plenary lecture in National Seminar on “Impact of climate Change on Biodiversity: Applications of recent technologies for conservation of threatened species”. Mizoram University, 22 – 24 September, 2016. Lecture Title “Eastern Himalayan Biodiversity of Arunachal Pradesh: What to do & not to do”.
- 2017 Delivered plenary lecture in International Conference on “Ecosystem Responses to Global Environmental Changes and their impact. 16 – 18 Feb., 2017. School of Life Science, Devi Ahilya Viswavidyalaya, Indore (M.P.) and Adarsh Institute of Management & Science, Dhamnod, M.P, India. Lecture Title “Wild and domesticated Mammals of High altitude Arunachal Himalaya and their Societal relevance”.
- 2017 Resource person in Refreshers’s course On “Emerging Trend in Science & Technology”-IDC (I) : 28th October, 2017. Lectures delivered on (1) Eastern Himalayan Biodiversity of Arunachal Pradesh: Floral and faunal species as Bioindicators & Fingerprint of climate change; (2) Traditional herbal Medicines of north east India & Female Reproductive Health.
- 2018 Delivered plenary lecture in National Seminar on “Recent Advances in Biosciences” Organized by Department of Zoology, Pragjyotish College, Assam. Lecture delivered on “Female Reproductive Health Problems: Natural products and techniques for basic and applied research”: 21st September, 2018.
- 2019 Delivered conference talk titled: “Spatio-temporal expression of Vascular Endothelial Growth Factor-C and its receptor (Flk-1/KDR) during periimplantation period in albino mice” in “International Conference on Reproduction, Endocrinology and Development” and 37th Meeting of the Society for Reproductive Biology and Comparative Endocrinology (SRBCE), January 18 – 21; Navrachana University, Vadodara, India.
- 2019 Delivered lectures in “Winter School on Bioresources of North East India” (30th January to 19th Feb., 2019) in HRDC, Gauhati University, Guwahati: 8th Feb, 2019.
- 2019 Delivered invited talk in the “North East Sustainable and Inclusive Development Summit” March 6-8; Kaziranga University, jointly organized by CSIR-NISTADS (National Institute of Science Technology and Developmental Studies).
- 2021 : Delivered Lecture on : Incredible Arunachal Pradesh: Habitat and Resources of Eastern Himalayan Biodiversity Hot Spot. Celebration of World Habitat Day (1st Monday of October, every year) on 4th October, 2021. By Department of Botany, University of Science & Technology, Meghalaya.

Professional Membership:

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|----------------|---|
| 2000 – present | Life Member: Society for Reproductive Biology and Comparative Endocrinology (INDIA) |
| 2002 – present | Regular Member: Society for the study of Reproduction (SSR, USA) |
| 2009 – present | Member, Society for Endocrinology (SfE), U.K. |
| 2016 – present | Life member, Indian Society for Study of Reproduction and Fertility, (INDIA) |

Community Service : Outreach programme/ Awareness programme for Biodiversity conservation, meeting with villagers and school children:

- 2012 : Awareness program at Government Secondary School, Aalo, Arunachal Pradesh
- 2013 : Awareness program, delivered lectures at (i) Darlong Secondary School, Seijosa; (ii) Devan Middle school, Namdapha, (Changlang district), A.P
- 2014 : Awareness camps and lectures among villagers and school students of Dibang valley, Lohit and Tirap district (A.P).
- 2015 : Organizing awareness camps, delivered lectures on Biodiversity conservation and climate change among villagers and school students of Kameng valley of A.P
Organizing “Swacch Bharat” Mission in villages
- 2016 : Organizing awareness camps, delivered lectures on Biodiversity conservation and climate change among villagers and school students of Tawang district of A.P
Organizing “Swacch Bharat” Mission in villages

Village Adoption : Under community service as Coordinator of Center with Potential for Excellence in Biodiversity, Rajiv Gandhi University.

2017 : **Adopted Lasum Pate village in East Kameng district of Arunachal Pradesh.**
Team of Scientist under CPEB-II led by Prof. H. N. Sarma visited the village on 18th March, 2017

Publications :

1. Indira Sarma, Upasa Gowala, Krishnakshi Mishra, Archana Saikia, Amar Jyoti Saikia, Kalyani Namchom and **Hirendra Nath Sarma**. Beneficial Endocrine Disruption as Steroid Receptor Functional Modulator by Phyestocompounds from Medicinally Important Plants: Impact on Female Reproduction. Proceedings of Zoological Society. (Springer). 2021 (Accepted).
2. Neelam Yania, Purba Jyoti Saikia, Daniel Mize and **Hirendra Nath Sarma**. Avian Diversity in Talle Valley :An endemic Bird Area of Eastern Himalayan Biodiversity Hot Spot in Lower Subansiri, Arunachal Pradesh, India. Journal of Bioresources. 2021; 8 (1)75-91.
<https://doi.org/10.17605/OSF.IO/5U3RH>
3. Dimpimoni Das, Purba J Saikia, Upasa Gowala and **Hirendra N Sarma**. Cell specific expression of Vascular Endothelial Growth Factor Receptor-2 (Flk-1/KDR) in developing mice embryo and supporting maternal uterine tissue during early gestation (D4 – D7). International Journal of Fertility and Sterility. 2021; 15(2):148-157
4. Khamhee Wangsha, Indira Sarma, Purbajyoti Saikia, D. Ananthkrishnan, **Hirendra Nath Sarma** and D. Vemurugan. Estrogenic effect of *Scoparia dulcis* (Linn.) extract in mice uterus and in silico molecular docking studies of certain compounds with human estrogen receptors. Journal of Reproduction and Infertility. Journal of Reproduction & Infertility. 2020; 22(4): 247-258.
5. Upasa Gowala, D. Ananthkrishnan, D. Vemurugan, Archana Saikia and **Hirendra Nath Sarma**. Chromatographic fractionation and in silico validation of bioactive compounds from

- Cynoglossum zeylanicum* (Lehm) for binding affinity with human ER and PR. Journal of Biologically active products from nature. (Taylor & Francis). 2020; 10(2): 122-140.
6. Isum Lollen, Ruksar Rukbo, Upasa Gowala, **Indira Sarma** and **Hirendra Nath Sarma**. (2020). Wild rats: A traditional delicacy and socio-cultural heritage of trapping technique in Siang Valley of Arunachal Pradesh, India. *Journal of Bioresources*.7 (2):71-76.ISSN:2394-4315.
 7. Padmini Baruah, Indira Sarma, Krishakshi Misra and **Hirendra Nath Sarma**. Root of *Lasia spinosa* used in traditional medicine for female reproduction possess compound(s) capable of cellular proliferation: An in vivo experimental evidence in mice uterine tissue. Journal of Bioresources (ISSN 2394-4315) December 2019; 6(2): 61-70.
 8. **Hirendra Nath Sarma**, Daniel Mize, Khamhee Wangsa, Dimpimoni Das, Upasa Gowala and Purbajyoti Saikia. Growth factors (VEGF and IGF) and ovarian hormones in embryo maternal tissue interaction during early embryo development (Review article). Journal of Bioresources (ISSN 2394-4315) December 2019; 6(2): 1-23.
 9. Indira Sarma, Khamhee Wangsa and **Hirendra Nath Sarma**. Threshold dose determination of estrogenic property using morphometric analysis of mice uterine epithelial proliferation and study of hepatic toxicity of *Scoparia dulcis* L. extract. Journal of Bioresources (ISSN 2394-4315) December 2019; 6(1): 46-55.
 10. Neelam Yania and **Hirendra Nath Sarma**. Perspectives of higher vertebrates in Arunachal Himalaya Biodiversity Hot spot. (Review). Journal of Bioresources (ISSN 2394-4315) December 2019; 6(1): 1-14.
 11. Shivaji Chavan, Mothilal Yuvaraja and **Hirendra Nath Sarma**. Bos Frontalis (Mithun): A flagship semi-domesticated mammal and its potential for “Mithun husbandry” development in Arunachal Pradesh. Concept of Dairy and Veterinary Sciences, August, 2018:134-138.
 12. Purbajyoti Saikia, Dimpimoni Das and Hirendra N Sarma. Immunolocalization of Endothelial Growth factor-C (VEGF-C) and its receptor (Flk-1/KDR) in preimplantation mice uterus: An in –situ investigation. Journal of Bioresources (ISSN 2394-4315) December 2018; 5(2): 33-43.
 13. Kanmuna Roy Talukdar and **Hirendra Nath Sarma**. Krupel Like Factor -5 (Klf-5): its role in cell physiology (Review article). Anandam: An annual Journal of Aundaram Borooah Academy Degree College, Pathsala, Assam. (ISSN-2321-8800). 2018: IV(I); 22-26.
 14. Purbajyoti Saikia, Dimpimoni Das, Daniel Mize, Moushumi Das, **Hirendra N Sarma**. Spatiotemporal Expression of Vascular Endothelial Growth Factor – C in mice fetal maternal tissues during periimplantation (D4-D7). Middle East Fertility Society Journal (**Elsevier**).2017; 22:115-124.
 15. Rakesh Miyu, Khamhee Wangsa, Indira Sharma, Upasha Gowala, Purba Jyoti Saikia and **Hirendra N. Sarma**. HPLC fractionation of crude root bark extract of cynoglossum

- zeylanicum and its estrogenic effects evaluated by vaginal cornification assay. *Journal of Bioresources* (ISSN 2394-4315) June 2017; 4(1): 61 – 70.
16. Indira Sarma, Hibu Yakang, Kanmuna R Talukdar, Rakesh Miyu and **Hirendra N Sarma**. A New look on basic histological structures of gastrointestinal tract of albino rat (*Ratus norvegicus*). *Journal of Bioresources* (ISSN 2394-4315) June 2017; 3(1): 49-60.
 17. P. Mothilal Yuvaraj, Neelam Yania, Sanjay Talukdar, Purbajyoti Saikia and Hirendra Nath Sarma. Field study of herpetofauna in Arunachal Pradesh: The eastern Himalayan Biodiversity hot spot, India. *Journal of Bioresources* (ISSN 2394-4315) December 2016; 3(2): 33-42.
 18. Kanmuna R Talukdar, Khamhee Wangsa, Indira Sarma, Satar Nabam **and Hirendra N Sarma**. Histomorphology of certain internal organs of Mithun (*Bos frontalis*) in eastern Himalayan region of Arunachal Pradesh. *Journal of Bioresources* (ISSN 2394-4315) December 2016; 3(2): 43-51.
 19. Hiranmaya Sharma and **Hirendra N Sarma**. Tamoxifen modulates Expression of Transforming Growth Factor- β I (TGF- β I) in rat uterus. *Journal of Bioresources* (ISSN 2394-4315) June 2016; 3(1): 60 – 71.
 20. Hiranmaya Sharma and **Hirendra N Sarma**. Rat uterine protein profile in response to Tamoxifen during estrous cycle in presence and absence of ovary in-situ. *Journal of Bioresources* (ISSN 2394-4315) June 2015; 2(1):7 – 15.
 21. Anju Jaishi, Moushumi Das, Purba J Saikia and **Hirendra N Sarma**. Secondary root extract of *Piper betleoides* causes changes in structural organization of Graafian follicle and uterine epithelium in rat during estrus and early gestational period. *Journal of Bioresources* (ISSN 2394-4315) June 2015; 2(1): 40 – 49.
 22. Doje Tana, Purba J Saikia, Hiranmaya Sharma and **Hirendra N Sarma**. Traditional hunting and trapping practices among the Nyishi tribe of Arunachal Pradesh and its impact on Biodiversity. *Journal of Bioresources* (ISSN 2394-4315) Dec. 2014; 1(1):25-32.
 23. Sanjay Talukdar, Neelam Yania and **Hirendra N Sarma**. Butterfly diversity and altitudinal preferences in Talle Valley Wildlife Sanctuary, Lower Subansiri District, Arunachal Pradesh, India. *Journal of Bioresources* (ISSN 2394-4315) Dec. 2014; 1(1): 38-44.
 24. Pranjiv Goswami, Ajit Hazarika & **Hirendra N Sarma**. Inhibition of Insulin like Growth Factor – I expression by chromatographic fraction of *Polygonum hydropiper* root reduces implantation preferences in rat. *Middle East Fertility Society Journal (Elsevier)* 2014; 19 :34-41.
 25. Moushumi Das, Anju Jaishi & **Hirendra N Sarma**. Traditional Medicines of Herbal Origin Practice by the Adi tribe of East Siang district of Arunachal Pradesh, India. **Global J of Research on Medicinal Plants & Indigenous Medicines**. May 2013; 2 (5) :292-304.

26. Moushumi Das, Purba Jyoti Saikia, **Hirendra N Sarma**. Crude bark extract of *dysozylum alliarium* induces alterations in histological structures and VEGF-C expression in uterus during days 4-7 of gestation in albino rat. **Reproductive Medicine and Biology** (Springer). 2013; 12 (3): 85-98.
27. Daniel Mize, Purba Jyoti Saikia, **Hirendra N Sarma**. Expression of Insulin-like Growth factor-I in uterus is ovarian steroid dependent : An In-situ immunohistochemical study in rat. **Journal of Reproduction and Contraception** (Elsevier). 2012 Dec.; 23(4): 222-236.
28. Ajit Hazarika, P.J. Saikia & **H.N. Sarma**. *Polygonum hydropiper* crude root extract estrogenic effects on uterine DNA content in female albino rat. **Indian Journal of Fundamental and applied Life Sciences**. 2011, 1 (4): 112-116.
29. Pranjiv Goswami, Ajit Hazarika and **Hirendra N Sarma**. Chromatographic fraction of *Polygonum hydropiper* root modulates the expression of Transforming Growth Factor- β I (TGF- β I) in rat uterus during days 2-6 of gestation. **Journal of Reproduction and Contraception**. 2011, 22(3) :153-167 (Elsevier).
30. Sanjay Talukdar and **Hirendra N Sarma**. A preliminary survey of butterfly diversity in selected districts in the Western part of Arunachal Pradesh, India. **The Indian Forester**, 2010, 136: 1353-60.
31. V Padmanabhan, **H N Sarma**, M. Savabieasfahani, T. L. Steckler and A. Veiga-Lopez. Developmental reprogramming of reproductive and metabolic dysfunction in sheep : native steroids vs. environmental steroid receptor modulator. **International Journal of Andrology**. 2010, 33: 1-10.
32. Ajit Hazarika¹, Utpal Borah¹, M. M. Borah¹, Lily Bordoloi¹ and Hirendra N. Sarma². Documentation of ecology and food plants of *Bos frontalis* (Mithun) in Arunachal Pradesh, India. **Journal of Environmental Research and Development**. 2010, 4(3): 687-694.
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