

Department of Veterinary Pharmacology and Toxicology Research

1. List of MVSc Thesis Completed :

Sr. No.	Topic	Year	Name of Student	Name of Research Guide
1	Studies on antibacterial activity of <i>Momordica charantia</i> against some pathogenic bacteria.	2004	Sayed M. I.	Dr. G. D. Ranvir
2.	Antibacterial activity of <i>Piper nigrum. L.</i> fruit against some pathogenic bacteria.	2005	Patil M. K.	
3.	Antibacterial activity of <i>Ficus religiosa</i> leaves extracts against some pathogenic bacteria	2006	Jagadale A. A.	Dr. A. A. Deshmukh
4	Antibacterial activity of <i>Embelica officinalis</i> fruit extracts against some pathogenic bacteria.	2007	Patil S. G.	
5	Subacute oral toxicity of Pralithrim in wistar rats.	2008	Azhar Akthar	
6	Hypoglycemic activity of <i>Azadirachta indica</i> leaves on normal and aloxan induced diabetic rats.	2008	Kahirsagar P.M	
7	Ameliorative effect of ethanolic extract of <i>Azadirachta indica</i> on lead acetate induced toxicity in rats.	2009	Chikhale M. V.	Dr. A. P. Somkuwar
8	Some pharmacological investigations of <i>Chloredendron phlomidis</i> in laboratory animals.	2010	Jadhav. V. D.	
9.	Reproductive toxicity studies of dimethoate in Wistar rats	2011	Ingale S. S.	
10	Invitro evaluation of antibacterial activity of <i>Enicostema littorale</i> against gram positive and gram negative organism	2012	Kshirsagar R K	Dr. A. A. Deshmukh
11	Screening of some pharmacological activity of <i>Paederia foetida</i> in rats.	2013	Kapse S. P.	Dr. A. P. Somkuwar
12	Screening of <i>Clerodendron inerme</i> for its anti-inflammatory activity in laboratory animals.	2014	Palimkar M. B.	
13	<i>In vitro</i> antibacterial activity of <i>Bauhinia racemosa</i> , <i>Aegle marmelos</i> and <i>Psidium guajava</i> plant extracts against gram positive organisms	2018	Gade R B	Dr. A. A. Deshmukh

14	In vitro antibacterial activity of <i>Delonix regia</i> , <i>Cassia alata</i> and <i>Murraya koenigii</i> plant extracts against gram positive organisms	2018	Pensalwar S B	
15	<i>In Vitro</i> Antibacterial Activity Of <i>Azadirachta Indica</i> Leaves Extract In Aqueous And Different Cow Urine Solvents	2019	Virshette S J	Dr. M. K. Patil
16	Developmental toxicity studies of some synthetic and herbal anti-inflammatory agents in Zebrafish (<i>Danio rerio</i>) embryos	2021	Junaid R. Shaikh	Dr. M. K. Patil
17	Antibacterial activity of <i>Ficus racemosa</i> and <i>Syzygium cumini</i> against <i>Escherichia coli</i> .	2021	Mahesh S Dhas	Dr. A. A. Deshmukh
18	Evaluation of synergistic antibacterial activity of <i>Mangifera indica</i> , <i>Moringa oleifera</i> and <i>Tamarindus indica</i> plant extracts against Gram negative organisms	2021	Waghmare Monica D.	Dr. A. A. Deshmukh
19	Antibacterial activity of <i>Butea monosperma</i> against <i>Escherichia coli</i>	2022	Walekar Mayur Sanjay	Dr. A. A. Deshmukh
20	Developmental toxicity studies of some synthetic drugs and fractionized extract of <i>Withania somnifera</i> in Zebrafish (<i>Danio rerio</i>) embryos.	2022	Musande Pranita Anandrao	Dr. M. K. Patil
21	Antidiabetic activity of <i>Withania coagulans</i> fruit extract in streptozotocin induced diabetic rats.	2023	Mahalle Amey Rajkumar	Dr. B. V. Ballurkar
22	Comparative antimicrobial activity of <i>Azadirachta indica</i> and <i>Curcuma longa</i> in different urine solvents of cow, buffalo and goats.	2024	Karamunge Swagati M.	Dr. M. K. Patil
23	Antibacterial activity of <i>Embilica officinalis</i> and <i>Momordica charantia</i> against gram negative organisms.	2024	Jadhav Rajshree B.	Dr. B. V. Ballurkar
24	Antibacterial activity of <i>Curcuma longa</i> against multi-drug resistant bacteria.	2025	Papshetwar Shweta A.	Dr. M. K. Patil
25	Antibacterial activity of <i>Syzygium aromaticum</i> against MDR gram negative bacteria isolated from the mastitis milk samples.	2025	Kamble Kanishk A.	Dr. B. V. Ballurkar

2. List of Private Agency Research Projects Completed :

Year	Extramural projects (Agency Funded Project)	PI	Funding agency	Total Cost (Rs)
2014-2015	Clinical trial of Tolfine 8% in farm animals.	Dr M K Patil	M/sVetoquinol Pvt. Ltd., Mumbai	65520/-
2011-2012	Efficacy of administration of AV/CGC/18 for maintenance of calcium homeostasis and prevention of calcium deficiency disorders during post-parturient period.	Dr A P Somkuwar	M/s Ayurved Ltd., Baddi, H.P	45100/-
2011-2013	Evaluation of lactogenic property of test compound.	Dr A P Somkuwar	NIF, Dehli	119900/-
2009	Sparing effect of Ayufytase on inclusion of inorganic phosphorus source (Dicalcium phosphate) in broiler diets.	Dr A P Somkuwar	M/s Ayurved Ltd., Baddi, H.P	39600/-
2008	Pharmacokinetic of cefaperazone and cefoperazone + sulbactum combination in cattle calves	Dr A P Somkuwar		22000/-

3. List of Research Projects completed (other than Private Agency):

Year	Extramural projects (Outside University Research Project)	PI/ Co-PI	Student from	Total Cost (Rs)
2014	Qualitative phytochemical analysis of <i>Canthium coromandelicum</i> leaf extract	Dr AP Somkuwar, Dr M K Patil	SRTMU, Nanded	- - -
2014	Study of anti-inflammatory activity of test compound.	Dr AP Somkuwar, Dr M K Patil	Udaipur, Rajasthan	10000/-
2014	Acute toxicity of test compound.	Dr AP Somkuwar, Dr M K Patil	Udaipur, Rajasthan	15000/-
2013	Screening of antidiabetic activity of <i>Canthium coromandelicum</i> in rats.	Dr A P Somkuwar, Dr M K Patil	SRTMU, Nanded	15000/-
2012	Screening of antiinflammatory activity of <i>Canthium coromandelicum</i> in rats.	Dr A P Somkuwar, Dr M K Patil	SRTMU, Nanded	10000/-

4. Research Priorities:

Research Area	Aim	Objective	Benefits of Farmers
<ul style="list-style-type: none"> The department is working in the area of Indigenous medicinal plants since last 21 years, during which the department has developed expertise in scientific screening of various medicinal plants for their different pharmacological activities. Major medicinal plants found in marathwada region are studied for their valuable medicinal activities. The department is also extending its expertise to various Pharmacy and Ayurvedic colleges in their studies. 	<ul style="list-style-type: none"> Strengthening of department by making available modern equipments and infrastructural facilities to carry out research at molecular level. Using data base generated by the department about Indigenous medicinal plants for preparing economical and easily available remedies to treat the ailing animals. 	<ul style="list-style-type: none"> To impart knowledge to the students in the field of Veterinary Pharmacology & Toxicology adopting dynamic system of education including audio- visual aids and simulation studies. To impart advanced training and hands- on to the students for enhanced skills. Undertake research using molecular and biotechnological tools to enhance quality, productivity and efficiency of livestock of the region and develop appropriate technologies to solve the problems of farmers. To focus on development of personality of student through class-talks/group-discussion, quiz competitions etc. To provide advanced on the recently developed technologies 	<ul style="list-style-type: none"> Advanced information to the farmers, animal owners, small and large entrepreneurs, on the recently developed technologies for overall development of Veterinary, Animal and Dairy sector of the region, as a part of extension services.

5. Research Priorities/ Thematic areas:

- Antimicrobial Resistance
- Studies on Complementary & Alternative Medicine (CAM) and Ethnoveterinary Medicine (EVM) by using Animal models
- Improvisation/Modification in drug delivery system/ formulations.
- Regulatory Toxicological studies
- Pharmacokinetic Studies

6. Research Papers Published:

MK Patil, AP Somkuwar and PV Patil (2022) Tissue level cefquinome concentration after intramuscular administration in Wistar rats. Multilogics in Science Oct. 2022 Issue XII (XXXXIV):303-305.

PV Patil, VM Salunke, **MK Patil** and SS Ghoke (2022) Effect of supplementation of Rumen Bypass Fat n Live Body Weight Milk Yield, Milk Composition and Body condition Score of Graded Murrah Buffaloes. Asian Journal of Dairy and Food Research, DOI: 10.18805/ajdfr.DR-1910 /Article ID: DR-1910

S S Palkar, **M K Patil** and M S Dhas (2021) *In vitro* anthelmintic evaluation of ethanolic extract of *Punica granatum* Linn. Journal of Pharmacognosy and Phytochemistry 2021; 10(1): 1506-1508.

MK Patil, AP Somkuwar and PV Patil (2020) Pharmacokinetics of Cefquinome in Marathwadi Buffalo Calves. Ruminant Science: 2020, Vol. 9 No.2, Pp: 229-232.

MK Patil, AP Somkuwar and NZ Gaikwad (2020) Safety assessment of cefquinome on repeated administration in buffalo calves. Toxicology International, Vol 27(3&4), 108-112, 2020, DOI: 10.18311/ti/2020/v27i3&4/25258

MK Patil, AP Somkuwar and NZ Gaikwad (2020) Study of serum levels of cefquinome in goats by using microbiological assay method. International Journal of Chemical Studies, SP-9(1): 29-30, 2020.

MK Patil, AP Somkuwar and PV Patil (2020) Pharmacokinetics of Cefquinome on Single Intravenous Administration in Marathwadi Buffalo Calves by Microbiological Assay Technique. Journal of Animal Research: v.10 n.4, p. 667-671. August 2020.

MK Patil, AP Somkuwar and PV Patil (2020) Pharmacokinetics of Cefquinome on Single Intramuscular Administration in Osmanabadi Goats by Microbiological Assay Technique. International Journal of Livestock Research, Vol. 10 (8) Aug'2020

MK Patil, AP Somkuwar and PV Patil (2020) Pharmacokinetics of cefquinome on single intravenous administration in osmanabadi goats. Multilogic in science, Vol. X, Issue XXXIV, July 2020, pp 828-830.

PV Patil, **MK Patil** and VM Salunke (2020) Dry matter intake and growth performance in osmanabadi goat kids maintained on DHN6 grass, Dashrath grass and Jowar straw. Journal of Entomology and Zoology Studies. 2020; 8(3): 1857-1858

MK Patil, AP Somkuwar and AA Deshmukh (2020) Pharmacokinetics of cefquinome and cefquinome concentration in various biological fluids in Marathwadi buffaloes. Journal of Entomology and Zoology Studies, Vol. 8, issue 3, May-June, pp. 724-727, 2020

MK Patil, AP Somkuwar and SR Rajurkar (2020) Study of serum levels of cefquinome in buffalo calves by using microbiological assay method. The Pharma Innovation Journal, 2020; 9(6): 207-208.

SJ Virshette, **MK Patil**, A A Deshmukh, Junaid R Shaikh and M S Dhas (2020) Phytochemical constituents of different extracts of *Azadirachta indica* leaves in urine solvent of non-pregnant cow. Journal of Pharmacognosy & Phytochemistry, 2020;9(2):1324-1328.

NS Bembde, PV Meshram, **MK Patil** and Junaid R Shaikh (2020) The preliminary phytochemical analysis of ethanolic extract of *Tylophora indica*. Research Journal of Pharmacognosy & Phytochemistry, Vol.12, Issue-1, 2020

SJ Virshette, **MK Patil**, NZ Gaikwad and Junaid R Shaikh (2020) Biochemical examination of Deoni cow urine. International Journal of Chemical Studies, 2020;8(2):2010-2012

SJ Virshette, **MK Patil**, AA Deshmukh and Junaid R Shaikh (2019) Phytochemical analysis of different extract of *Azadirachta indica* leaves. International Journal of Pharmaceutical Sciences Review and Research, 59(1), November-December2019, Pages: 161-165.

PV Patil, VM Salunke, MK Patil, SS Ghoke and PP Devkate (2019) Effect of supplementation of glucogenic precursors with B-complex vitamins and minerals on milk yield and milk composition of Deoni cows, International journal of chemical

studies, 7(2):1883-1884.

RT Dhawale, SS Pitlawar, CL Badgujar, SM Agivale, **MK Patil** and VN Khandait (2019) Evaluation of comparative efficacy of xylazine-ketamine-guaifenesin and ketamine-guaifenesin anaesthesia for surgical management of urogenital affections in cattle. Journal of Entomology and Zoology Studies 2019; 7(1): 465-469.

SB Pensalwar, AA Deshmukh, **MK Patil**, NZ Gaikwad, MA Khan, AV Bhonsle and RB Gade (2018) Phytochemical analysis and percent extractability of *Delonix regia*, *Cassia alata* and *Murraya koenigii* leaf extracts. Journal of Pharmacognosy and Phytochemistry 2018; 7(6): 332-335.

RB Gade, AA Deshmukh, **MK Patil**, AV Bhonsle, NZ Gaikwad, MA Khan and PV Jadhav (2018) Screening some local plants for antibacterial activity against gram positive organisms. Multilogic in Science, Vol. Viii, Issue Xvii, Oct 2018

RB Gade, AA Deshmukh, **MK Patil**, SB Pensalwar, SJ Virshette and MD Waghmare (2018) Comparative study of phytochemical analysis and extractive value of *Aegle marmelos*, *Bauhinia racemosa* and *Psidium guajava*. Journal of Pharmacognosy and Phytochemistry, Vol. 7, Issue 5 (2018);2904-2907

VB Patil, MA Khan, SG Chavhan, NZ Gaikwad, AV Bhonsle and **MK Patil** (2018) Protective effects of Neem (*Azadirachta indica*) leaf powder on experimentally induced colibacillosis in Broilers. Indian J. Vet. Pathol., 42(4) : 276-280, 2018.

MK Patil, PV Patil and AP Somkuwar (2018) Therapeutic efficacy of Tolfenamic acid 8% in Clinical Mastitis of Bovines. Raksha Technical Review, Vol. VII, Issue 2, Feb. 2018, pp. 10-12.

MK Patil, PV Patil and AP Somkuwar (2018) Therapeutic efficacy of Tolfenamic acid 8% in Respiratory Diseases of Bovines. Intas Polivet, 2018 Vol.19 (1):47-49

PV Patil, VM Salunke, AB Kanduri, VB Dongre and **MK Patil** (2017) Effect of urea treatment on chemical composition of crop residues. Ruminant Science, Vol. 6, No.2, pp 345-347, Dec. 2017.

PS Ekambe, BS Surwase, AP Somkuwar and **MK Patil** (2016) *In vivo* Anti-inflammatory and Antidiabetic Potential of Crude leaf extracts of *Canthium coromandelicum* (Burm.f.) Alston. Journal of Biologically Active Products from Nature. TBAP 6(3) Sept. 2016: Pp:195-208.

PV Patil and **MK Patil** (2016) Knowledge of Scientific Feeding Practices among dairy farmers of Palus tehsil of Sangli District. Ruminant Science, Vol. 5, No.1, pp 43-46, June 2016.

PV Patil and **MK Patil** (2014) Field level farm practices for calf rearing by dairy farmers in Palus tahsil of Sangli district of Maharashtra state (India). Research Journal of Animal Husbandry and Dairy Science, Vol.5, Issue 2, Dec. 2014.Pp:161-162.

AP Somkuwar, **MK Patil**, BV Ballurkar, MJ Saxena, K Ravikanth, A Thakur and Shivi Mani (2013) Treatment of post parturient hypocalcaemia in Marathwari Buffaloes with ionic oral calcium supplement. Veterinary Practitioner Vol.14, No. 1, June 2013.Pp: 62-63.

AP Somkuwar, K Ravikanth, S Maini, DS Rekhe, **MK Patil and** B Ballurkar (2010) Phytase with synergistic Herbs: an option to reduce Environmental Pollution by partial replacement of Inorganic Phosphorus in Broiler Ration. International Journal of Poultry Science 9 (4): 390-394, 2010.

MS Mendhe, MI Qureshi, **MK Patil**, SA Jaiswal and PR Lokhande (2009) Ameliorative effect of *Withania somnifera* L. On Lead acetate induced toxicity in rats. J. Vety Pharmacology and Toxicology, Vol.8, issue 1-2, December 2009. Pp: 79-81.

AU Borde, MI Qureshi, MS Mendhe, **MK Patil** and AM Athawaley (2009) Effect of *Withania somnifera* L. On histoarchitecture of sexual and visceral organs in cadmium chloride induced toxicity in Wistar rats. Animal Science Reporter, Vol.3, issue-04, Oct 2009.

AU. Borde, AM Athawaley, MS Mendhe, **MK Patil**, PR Lokhande and SA Jaiswal (2008) Ameliorating potential of Ashwagandha on cadmium chloride induced changes in weights of visceral organs. Veterinary World. Nov. 2008, Vol.1 (11) Pp.343-345.

AU Borde, MI Qureshi, **MK Patil**, MS Mendhe and AM Athawaley (2008) Protective effect of *Withania somnifera* L. On cadmium chloride induced haematological and biochemical changes in male rats. The Journal of Research and Education in Indian Medicine, Vol. XIV:2, April-June, 2008.

PV Patil and **MK Patil** (2008) Therapeutic efficacy of Ceftriaxone (Intacef) in clinical mastitis of cows. Intas Polivet, Vol.9 (2008) No.1.

RD Padile, GU Yadav, AU Bhikane, **MK Patil**, DB More and NM Markandeya (2008) Rectovaginal fistula in Buffalo. Veterinary World, Feb.2008, Vol.1, No.2, Pp.54.

AA Jagdale, AA Deshmukh, AV Bhonsle, SG Patil and **MK Patil** (2007) Antibacterial activity of cold extracts of *Ficus religiosa* leaves by disc diffusion method. J Vety. Pharmacology and toxicology. Vol. 6, Dec. 2007

GU Yadav, VD Aher, AU Bhikane and **MK Patil** (2007) Surgical management of cataract in a Buffalo calf. Veterinary World Vol.6, No.4, Dec.2007, Pp.109-110.

PV Patil, VH Kalbande and **MK Patil** (2007) Effect of essential amino acids fed with soyabean meal on weakly feed conversion ratio of broilers. IVJ Nov.2007, Vol.84 (No.11) Pp.1203.

MK Patil, GD Ranvir, AV Bhonsle and PV Patil (2007) Antibacterial activity of cold & hot extracts of *Piper nigrum* fruit by disc diffusion method. TRVJI. Vol.3, Issue 2,July 2007 Pp128-130.

MK Patil, AA Deshmukh, GD Ranvir, PV Patil and AA Jagdale (2007) Phytochemical studies of 70 % alcoholic hot extract of *Piper nigrum* fruit. Aryavaidyan. Vol.XX.No.4, May-July 2007, PP.235-238.

AA Jagdale, AA Deshmukh, AP Somkuwar and **MK Patil** (2007) *In-vivo* efficacy of the methanol leaf extract of *Ficus religiosa* in mice against induced bacteria infection. J.Vety Pharmacology & Toxicology.Vol.6 (2007) No.1 (June).

MK Patil, AA Deshmukh, GD Ranvir, RR Mugale and PV Patil (2007) Antibacterial efficacy of *Piper nigrum* fruit. J Vety Pharmacology & Toxicology.Vol.6 (2007) No.1.

GU Yadav, UB Deore, AD Patil, AU Bhikane, **MK Patil** and NM Markandeya (2007) Rectovaginal fistula in Bovines. Veterinary Practitioner, June 2007, Vol.8, No.1, Pp.22-23.

MK Patil, GU Yadav, VD Aher, AU Bhikane and NM Markandeya (2007) Avulsion of lip in Bovine and its surgical treatment. Intas Polivet, Vol.8 (2007)No.1, Pp. 180-181.

MK Patil, AA Deshmukh, GD Ranvir, AG Karpe and PV Patil (2007) Determination of Minimal Inhibitory Concentration of 70% alcoholic hot extract of *Piper nigrum* fruit extract against some pathogenic bacteria. The J. Research & Education in Indian Medicine.Jan-Mar 2007 (Volume XIII:1) PP.-39-41.

MK Patil, AA Deshmukh, GD Ranvir, AB Kanduri and PV Patil (2006) Preparation and estimation of % extractability of *Piper nigrum* fruit extracts. J. Vety Pharmacology & Toxicology. Volume 5, Dec.06: Issue 1-2, PP.76-77.

7. Review Article:

MK Patil, PV Patil and AV Bhosale (2023) Herbs as an Immunomodulators or Immunostimulants in Animals – A Review. *J. Exp. Zool. India* Vol. 26, No. 1, pp. 19-27 2023.

PV Patil, **MK Patil**, VM Salunke and S F Nipane (2022) Azolla (*Azolla pinnata*) as an alternative protein source for broiler chicken. *Multilogics in Science* Oct. 2022 Issue XII (XXXXIV):275-279.

MK Patil, PV Patil and Junaid R Shaikh (2021) Formulation and delivery of vaccines in wildlife: A Review. *Raksha Technical Review*, Feb 2021, Vol. X, Issue 2, Pp: 57-59.

PV Patil, MK Gendley and MK Patil (2021) Immunity augmentation through nutritional approach in animals: A Review. *The Pharma Innovation Journal* 2021; SP-10(5): 232-238.

PV Patil, MK Gendley and MK Patil (2021) Leaf protein: New protein source for ruminants. *Journal of Entomology and Zoology Studies* Vol. 9, Issue 2, pp 161-165, 2021.

Junaid R Shaikh and **MK Patil** (2021) Adverse drug reactions and drug reactions associated with the use of antibacterial agents in veterinary patients. *International Journal of Creative Research Thoughts (IJCRT)*, Volume 9, Issue 1, January 2021

SB Pensalwar, **MK Patil** and Junaid R Shaikh (2020) Herbal Immunomodulator: A Mini Review. *Bulletin of Environment, Pharmacology and Life Sciences*, Vol.9(5), 2020.

SJ Virshette, **MK Patil** and Junaid R Shaikh (2020) A Review on pharmacological properties and phytoconstituents of Indigenous carminative agents. *Journal of Pharmacognosy & Phytochemistry*, 9(3): 142-145 , May-June, 2020.

Junaid R Shaikh and **MK Patil** (2020) Drug residues in milk and milk products: sources, Public health, impacts, Prevention and Control. *International Journal of Livestock Research*, Vol. 10 (6) June'2020.

Junaid R Shaikh and **MK Patil** (2020) A review on Phytotoxins and qualitative tests for their detection. *Journal of Pharmacognosy & Phytochemistry*, 9(2):1502-1507, 2020.

Junaid R Shaikh and **MK Patil** (2020) Qualitative tests for preliminary phytochemical screening: An overview. *International Journal of Chemical Studies*, Vol.8, Issue 2 (2020).

SJ Virshette, **MK Patil** and AP Somkuwar (2019) A Review on medicinal plants used as anti-inflammatory agents. *Journal of Pharmacognosy & Phytochemistry*, Vol. 8, Issue 4 (2019),pp1641-1646.