

## Bio- Data



**Name**

**Dr Karuna Singh**

**Address for correspondence-**

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Flat No. 2 'C', Pavitra Apartments –Block C  
South Civil Lines, Jabalpur-482001

### **I Personal Data-**

**Designation**

Associate Professor in Zoology

**Areas of interest**

Animal Mycology and Immunoinformatics

### **II Education-**

**Ph.D. -**

From R.D. University, Jabalpur in December 2002  
Title- '**Studies on the immune system of red cotton bug *Dysdercus similis* (Heteroptera : Pyrrhocoridae) with special reference to some fungal pathogens'**

**M.Sc. -**

From Govt. Autonomous Science College, Jabalpur  
with 75.45% in Zoology (Entomology)

**B.Sc. -**

From Govt. Science College (R.D. University), Jabalpur  
62%

### **III Teaching Experience-**

Undergraduate classes- 14 years

Postgraduate classes - 13 years

### **IV Research Experience-**

Having 16 years of research experience (excluding Ph.D.) in  
the field of Insect Immunology and Animal Mycology

### **V Additional Information-**

NSS Program Officer from **Aug 2004 to Sep. 2004**

Hostel Warden of Kirti Kunj Hostel, MMV from **01.11.2004  
to 30.05.2013**

Administrative Warden of Swasti Kunj Hostel from **01.06.2013**

**to 31.05.2015**

Co-convener of Science Admission Committee of MMV

**IV Courses taught in Undergraduate and Post graduate -**

Immunology in M.Sc. Bioinformatics and Applied Microbiology  
Animal Behaviour, Development Biology, Environmental Biology,  
Biotechniques in Undergraduate classes.

**V Research Guidance-**

**PhD: Awarded- 3; Undergoing-4**

Supervised **10** dissertations of M.Sc.

Supervised **30** projects of B.Sc. (Hons) Zoology Semester VI

**VI Research Project-**

CST-UP funded project entitled Studies on antifungal peptides and peptidomimetics

DST-SERB funded project entitled Synthesis, characterization and pharmacokinetics evaluation of potent integrin antagonists for prevention of treatment of fungal infection

**VII Membership of National and International societies-**

Life member of Indian society of Human and Animal Mycologists(**SIHAM**)

Member of International Society of Human and Animal Mycology (**ISHAM**)

Life Member of **Veterinary Mycology working group of ISHAM**

**VII Training program-**

Conducted one day training program of students of B.Sc. (H) Botany  
Sem VI jointly with Dr Richa Raghuvanshi, Assistant Professor in Botany

## VIII Publications-

### Publications (list of papers in year wise descending order)

1. Neelabh and **Singh K.**; *In-silico* studies of some natural, synthetic and semi-synthetic antifungal drugs for their multi-targeting nature. *Journal of Microbiology, Biotechnology and Food Sciences*. 8, 711-716, 2018.
2. Seyedmousavi S., Bosco S. M. G., de Hoog S., Ebe F., Elad D., Gomes R. R., Jacobsen I. D., Martel A., Mignon B., Pasmans F., Pieckova E., Rodrigues A. M., **Singh K.**, Vicente V.A., Wibbelt G., Wiederhold N.P. and Guillot J.; Fungal infections in animals: a patchwork of different situations. *Medical Mycology*. 56, S165–S187, 2018.
3. Neelabh, Tirkey N.N. and **Singh K.**; *In-silico* and *in-vitro* studies on fungal chitinase as a target enzyme for antifungal activity of closantel. *Journal of Microbiology, Biotechnology and Food Sciences*. 7, 459-453, 2018.
4. Neelabh and **Singh K.**; ABC and MFS Transporters: A reason for Antifungal drug resistance. *Achieves of Biotechnology and Biomedicine (Invited manuscript)*. 2, 1-7, 2018.
5. Neelabh and **Singh K.**; From Natural products to therapeutically important antifungals. *Current Trends in Biotechnology and Pharmacy*. 12, 206-212, 2018.
6. Kumar S., **Singh K.** and Dwivedi K. N.; Repellent effect of three plants *Curcuma longa*, *Cymbopogon citrates*, *Adhatoda vsica* against insect pests *Silverfish*, *Acrotelsa Collaris* (Fabr.) (Thysanura:Lepismatidae). *World Journal of Pharmaceutical Research*. 6, 1518-1527, 2017.
7. Kumar S., **Singh K.** and Dwivedi K.N.; Potential of Indian traditional medicinal plant turmeric as insecticide antifeedant and insect repellent against household museum and library insect pests. *International Journal of Entomology Research*.
8. **Singh K.**, Rani J, Neelabh, Rai G. K. and Singh M.; A group of Southeastern Asian House mouse (*Mus musculus castaneus* Linn.) as a new passenger host for *Cryptococcus neoformans* var. *grubii* molecular type VNI. *Medical Mycology*. 55, 1-8, 2017.
9. Uttam G., Neelabh and **Singh K.**; Antifungal activity of human neutrophil peptides (HNP-1, HNP-2 and HNP-3) against glucuronoxylomannan (GXM) of *Cryptococcus neoformans*: An *In-silico* study, *International Journal of Academic Research and Development*. 2, 165-170, 2017.
10. Neelabh and **Singh K.**; *In-silico* Prediction of T and B cell Epitopes in the Evolutionary Conserved Pathway of glycolysis for Human Pathogens: *Coccidioides immitis*, *Histoplasma capsulatum* and *Pneumocystis carinii*. *Current Trends in Biotechnology and Pharmacy*. 11, 242-252, 2017.

11. Neelabh and **Singh K.**; *In silico* studies on the effect of griseofulvin on tubulin protein of *Cryptococcus neoformans* and its *in vitro* validation. Journal of Microbiology, Biotechnology and Food Sciences. 6, 1280-1283, 2017.
12. Rani J. and **Singh K.**; Prevalence of saprolegniasis caused by *Saprolegnia parasitica* (coker) in fresh water fishes of Eastern Uttar Pradesh, India: Experimental pathogenicity of the isolate in fresh water fish *Channa punctatus* (Bloch). Progressive Research. 11(9), 6237-6242, 2016.
13. Neelabh and **Singh K.**; Sequential and structural aspects of antifungal peptides from animals, bacteria and fungi based on bioinformatics tools: A Review. Probiotics and Antimicrobial Proteins. 8(2), 85-101, 2016.
14. **Singh K.**, Rani J. and Neelabh; First report of dimorphism in *Aspergillus versicolor* isolated from freshwater fish *Heteropneustus fossilis*. International Journal of Microbiology, Biochemistry and Molecular Biology. 02(1), 01-03, 2016.
15. Neelabh, Singh P. and **Singh K.**; *In-silico* identification of B and T cell epitopes from four human pathogenic species of *Candida*. International Journal of Scientific Research in Knowledge. 3(8), 0213-219, 2015.
16. Neelabh, Jaiswara K., Kumari A. and **Singh K.**; *In-silico* designing of NKK: A better ligand than Aciclovir against Herpes Simplex Virus. Indian Journal of Pharmaceutical and Biological Research. 3(1), 48-55, 2015.
17. Upadhyay R., Kashyap S.P., Tiwari K.N., **Singh K.** and Singh M; Micropropagation of *Phyllanthus fraternus* Webster (Euphorbiaceae) from field-derived shoot tip explant and assessment of its genetic fidelity. Brazilian Journal of Botany. 38, 517-525, 2015.
18. Upadhyay R., Kashyap S.P., Singh C., Tiwari K. N. and **Singh K.**; Evaluation of Antioxidant Property of Whole Plant Extracts of *Phyllanthus fraternus* Webster –A Potent Pharmaceutical Agent. Research Journal of Chemistry and Environment. 2014
19. Upadhyay R., Kashyap S.P., Singh C., Tiwari K. N., **Singh K.** and Singh M.; Assessment of factors on shoot proliferation potential of nodal explants of *Phyllanthus fraternus* Webster and assessment of genetic fidelity of micropropagated plants using RAPD marker, Biologia. 69(12), 1685-1690, 2014.
20. Upadhyay R., Kashyap S. P., Singh C. S., Tiwari K. N., **Singh K.** and Singh M; *Ex-situ* conservation of *Phyllanthus fraternus* Webster and evaluation of genetic fidelity in regenerates using DNA based molecular marker. Applied Biochemistry and Biotechnology. 174 (6), 2195-2208, 2014.
21. Upadhyay R., Chaurasia J. K., Tiwari K. N. and **Singh K.**; Antioxidant Property of Aerial Parts and Root of *Phyllanthus fraternus* Webster, an Important Medicinal Plant, Scientific World Journal. 24, 1-7, 2014.

22. Upadhyay R., Chaurasia J. K., Tiwari K. N. and **Singh K.**; Comparative Antioxidant Study of Stem and Stem Induced Callus of *Phyllanthus fraternus* Webster an Important Antiviral and Hepatoprotective Plant, Applied Biochemistry and Biotechnology. 71, 2153-2164, 2013.
23. Upadhyay K., Tiwari K. N. and **Singh K.**; High frequency shoots regeneration for mass multiplication of *Phyllanthus fretanus* Webster- an important antiviral and hepatoprotective plant. Applied Biochemistry and Biotechnology. 169, 2302-2314, 2013.
24. **Singh K.** and Rani J.; First case of cryptococcosis caused by *Cryptococcus neoformans* and *Cryptococcus gattii* in a new host species *Mus musculus castaneus* (House mouse) in Varanasi (Eastern Uttar Pradesh), India.(Abstract), Mycoses. 55 (Suppl. 4), 339-355, 2012.
25. **Singh K.**; Cellular and humoral immune responses of *Dysdercus similis* (Heteroptera: Pyrrhocoridae) against nematodes. Biozone. III (1&2), 522-525, 2011.
26. Nawange S. R., Singh S. M., Naidu J., Sethi R., Jain R., Tiwari A. and **Singh K.**, Serotype distribution of *Cryptococcus neoformans* and *Cryptococcus gattii* in patients and in the environment of Jabalpur, a city of Madhya Pradesh in India. Asian Journal of Microbiology Biotechnology and Environmental Science. 13(IV), 735-742, 2011.
27. **Singh K.** and Pathak S. C.; Effect of *Aspergillus fumigatus* infection on cellular and humoral immune responses in red cotton stainer *Dysdercus similis* (Heteroptera: Pyrrhocoridae). Biological Forum. 2(I), 2010.
28. Nawange S. R., **Singh K.**, Naidu J. and Singh S. M.; Naturally acquired systemic dual infection caused by *Candida famata* (*Debaryomyces hansenii*) and *Candida catenulata* in albino rats bred for sale in the market at Jabalpur, (M.P.) India. Mycoses. 1-12, 2009.
29. Singh S. M., Naidu J., Sharma A., Nawange S. R., **Singh K.**; Reply to Prof. Randhawa (Letter to Editor). Medical Mycology. 45, 653-654, 2007.
30. Singh S. M., Naidu J., Sharma A., Nawange S. R. and **Singh K.**; First case of cryptococcosis in bandicoot rat (*Bandicota indica*) caused by *Cryptococcus neoformans* var.*grubii*. Medical Mycology. 44, 1-5, 2007.
31. Pathak S. C., **Singh K.** and Makoday M.; Regulation of haemocytes in red cotton stainer *Dysdercus similis* Freeman (Heteroptera: Pyrrhocoridae). Entomon. 31(3), 243-249, 2006.
32. Pathak S. C., **Singh K.** and Makoday M.; Haemocytes profile of the Red cotton stainer *Dysdercus similis* Freeman (Heteroptera: Pyrrhocoridae). Journal of Comparative Toxicology and Physiology. II, 52-59, 2005.
33. **Singh K.** and Pathak S. C.; Morphology and Morphometry of Haemocytes in *Serinetha augur* Fabr. (Heteroptera: Coreidae). Advances in Biosciences. 18(11), 93-100, 1999.

## Book chapters-

1. **Singh K.**, Ilkit M., Shokohi T., Toloee A., Malik R., Seyedmousavi S.; Cryptococcosis: Emergence of *Cryptococcus gattii* in animals and zoonotic potential. Springer International, 2018
2. **Singh K.**; Fate of Mycotoxins in Food. Kala Prakashan, 2018
3. Rani J. and **Singh K.\***; Isolation of non pathogenic strain of ballistosporous yeast *Sporobolomyces salmonicolor* from house mouse *Mus musculus* (Rodentia: Muridae). Springer, New Delhi, 2013
4. **Singh K.**, Haemolymph protein profile of red cotton bug *Dysdercus similis* (Heteroptera: Pyrrhocoridae) infected by *Aspergillus fumigatus*, a fungal pathogen. Prasanna Prakashan, Bhopal, 2011
5. **Singh K\*** and Pathak S. C.; Experimentally induced aspergillosis in red cotton stainer *Dysdercus similis* (Heteroptera: Pyrrhocoridae): a histopathological study. MMV, BHU, 2009

## Laboratory Manual – 01

Laboratory manual on Immunology, Microbiology and Biotechniques, 2014 by Karuna Singh, Radha Choubey and Rashmi Singh

## Books Edited - 01

Bharatiya Sanskriti mei Prakriti: Ek Anusheelan. Editors: Dr. Abha Mishra Pathak, Dr. Nishat Afroz, **Dr. Karuna Singh**

## Details of patents-

1. **Patent published -01** entitled -  
Aqueous extract of whole fruits of *Azadirachta indica* L. as an antifungal agent for the treatment of saprolegniasis with reference to fresh water fishes. **1972/DEL/2013 dated 03/07/2013**
2. **Patent published - 01** entitled-  
Antifungal effect of Cinnamon extract on *Aureobasidium pullulans* var. *pullulans* and *Exophiala dermatidis*. Application no.- **201611004845 dated 2016/02/11**

## Partial sequences submitted in NCBI Gene bank - 11

*Cryptococcus neoformans* isolate JKMMVBHU2 **Accession No. KJ175193**

*Cryptococcus neoformans* isolate JKMMVBHU1 **Accession No. KJ175192**

*Cryptococcus neoformans* isolate JKMMVBHU3 **Accession No. KJ175191**

*Saprolegnia parasitica* genomic sequence **Accession No. KJ175194**

*Pichia kudriavzevii* strain BHUMMVJK2 **Accession No. KF964047**

*Candida tropicalis* strain JKMMVBHU1 **Accession No. KF964048**

*Saprolegnia* sp. JR-2014a **Accession No. KJ020929**

*Candida tropicalis* strain JKMMVBHU **Accession No. KC818415**

*Pichia kudriavzevii* strain BHUMMVJK1 **Accession No. JX675573**

*Westerdykella* sp. kjvar **Accession No. JF937915**

*Eupenicillium brefeldianum* strain BHUKKJ1 **Accession No. HQ129858**

### **Professional Recognition/Award received-**

S. No.	Name of Award	Awarding Agency	Year
1	<b>Best Presentation Award</b> in Symposium “Power of fungi and mycotoxins in health and Disease- 20-23 Sep 2015” <b>Siebnik, Croatia</b>	Croatian Microbiological Society and Federation of European Microbiological Societies (FEMS)	2015
2	<b>Chaired a session entitled ‘Fungal diseases in animals’</b> in Power of fungi and mycotoxins in health and Disease- 20-23 Sep 2015, <b>Siebnik, Croatia</b>	Croatian Microbiological Society and Federation of European Microbiological Societies (FEMS)	2015
3	<b>Best Poster Presentation</b> in International Conference on Mycology and Plant Pathology: Biotechnological Approaches, Feb 27-29, 2012	Centre of Advanced Study in Botany, BHU	2012