OMB No. 0925-0001 and 0925-0002 (Rev. 10/15 Approved Through 10/31/2018)

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: Chaphalkar, Renuka Makarand

eRA COMMONS USER NAME (credential, e.g., agency login): NA

POSITION TITLE: Graduate student

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.

| INSTITUTION AND LOCATION | DEGREE(if applicable) | Completion DateMM/YYYY | FIELD OF STUDY |
| --- | --- | --- | --- |
|  |  |  |  |
| University of Pune, India | B.Pharmacy | 06/2010 | Pharmacy |
| NMIMS University, Mumbai, India | M.Pharmacy | 06/2013 | Pharmacology |
| University of North Texas Health Science Center | Graduate student | 2014 - Present | Biomedical Sciences |
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**A. Personal Statement**

Glaucoma is the second most common cause of blindness worldwide. Primary open angle glaucoma is the most prevalent form of glaucoma characterized by optic nerve degeneration, progressive retinal ganglion cell apoptosis and cupping of the optic disk leading to irreversible vision loss. A major risk factor in glaucoma is elevated intraocular pressure (IOP) and current treatment approaches only focus on lowering the IOP. But, lowering the IOP does not completely prevent the gradual optic nerve damage. It would be beneficial to devise novel strategies to protect the retinal ganglion cell axons from degeneration. Despite multiple neuroprotective agents that have been identified in animal models of glaucoma, none has progressed to the clinic. My research interests include study of neuroprotective effects of transcription factor Brn3b (POU4F2) in the retina and optic nerve in rodent model of ocular hypertension. Previous studies have shown that Brn3b is responsible in axonogenesis during RGC development. In addition, overexpression of Brn3b has been shown to contribute to the survival of RGC’s and maintaining the integrity of optic nerve axons during IOP elevation. But the detailed molecular mechanisms involved in this process are still unknown. So, identifying the genes regulated by Brn3b and studying the mechanisms by which it promotes neuroprotection may open new potential targets for glaucoma therapy. Due to the recent exciting progress in the area of neuroprotection, further work could lead to the development of therapeutic strategies to slow the progression of glaucoma.

I completed my undergraduate study in Pharmacy which further stimulated me to apply for a Master’s program. I went on to obtain my post-baccalaureate degree in Pharmacology. During my graduate study, I worked on investigating the *in vivo* pharmacological evaluation of *Phyllanthus emblica* *L*. barkin ethanol induced hepatotoxicity model. I also worked on formulation of engineered nanosuspensions containing model drug, lansoprazole. With an aim to undertake independent research, I decided to pursue my Ph.D. in biomedical sciences. Based on my interest in molecular biology, I shifted the focus of my work from core Pharmacy to molecular biology and joined the laboratory of Dr. Raghu Krishnamoorthy (North Texas Eye Research Institute at UNTHSC) specializing in molecular mechanisms underlying glaucomatous neurodegeneration. When not in lab, I enjoy singing and listening to classical and bollywood music. Being a foodie, I like to develop my culinary skills by cooking amazing Indian dishes.

**B. Publication**

**1. Shende P, Chaphalkar RM, Deshmukh K, Gaud RS. (2016). Physicochemical Investigation of Engineered Nanosuspensions Containing Model Drug, Lansoprazole. Journal of Dispersion Science and Technology. 37(4), 504-511.**

**C. Academic Projects**

**1)Title: “Ethanolic extract of *Phyllanthus emblica L.* bark provides hepatic protection: Physicochemical characterization and in vivo pharmacological against alcohol induced liver damage” at National Toxicology Centre, Pune.**

**Induction model: Alcohol**

**The project involved evaluation of ethanolic extract of *Phyllanthus emblica* against alcohol induced liver damage.**

**Duration: 8 months**

**2)Title: “Formulation and evaluation of lansoprazole nanoparticles in the form of nanosuspension using the technique of high pressure homogenization.”**

**The project included:-**

**a)Preformulation studies.**

**b)Formulation of pure nanosuspension and its complex using β-cyclodextrin.**

**c)Evaluation.**

**Duration: 5 months**

**3)Title: “Pharmacological Evaluation of *Lagenaria siceraria* on catalepsy animal model.” Induction model: Haloperidol and metoclopramide.**

**Duration: 4 months**

**D. Academic achievements**

**Acceptance of research work titled “Ethanolic extract of *Phyllanthus emblica L.* bark provides hepatic protection: Physicochemical characterization and in vivo pharmacological evaluation” for Gufic prize session category at 46th annual conference of Indian Pharmacological society at Bangalore.**

**Excelled in academics achieving first class throughout my 4 years and was also the top student in Pharmaceutical Chemistry in first year. Received distinction in Pharmaceutical Chemistry, Pharmacognosy and Pharmaceutical Analysis.**

**E. Industrial Work**

**Worked as a trainee in Hindustan antibiotics, Pimpri, Pune in Quality control and Quality Assurance departments.**

**B.Pharm industrial training - Litaka Pharmaceuticals, Pimpri, Pune. It provided me valuable inputs in formulation and packaging of finished pharmaceutical products.**

**F. Research Experience**

**Position: Intern.**

**Organisation: National Toxicology Centre, Pune, India.**

**G. Extracurricular achievements**

**Awarded Sakal India Foundation Scholarship 2014.**

**As a part of extracurricular activities I participated in various events during the 45th National pharmacy week.**

**poster and oral presentation on the topic “Self medication: How safe?”**

**Participated in the patient counselling competition based on the theme – “Ask your pharmacist - for safe use of prescription medicines.”**

**Member of Indian Pharmacological society.**

**Registered Pharmacist of Maharashtra State Pharmacy Council.**