



# ANNAMACHARYA COLLEGE OF PHARMACY


New Boyanapalli, Rajampet, Annamayya Dist, A.P., India

Book / Book Chapters/ Conference Proceedings for the academic year

ASSESSMENT YEAR: 2022-2023



Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Year of publication	ISBN/ISS N number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
1	Madhu Medabalimi	NA	Development and validation of stability indicating RP UPLC Method for quantitative estimation of Safinamidemesy late in bulk and its tablet dosage form	SABINP-2023	Current Sustainable Agricultural, Biotechnological, Nutritional, and Pharmaceutical Interventions to Combat Global Challenges	International	2022	0973-8916	JNTUA, Ananthapuramu	Association of Biotechnology and Pharmacy
2	Giri rajasekhar Dornadula	Breakthrough in Management of Cardiovascular Diseases by Artificial Intelligence in Healthcare Settings	NA	NA	NA	International	2023	978-981-5080-45-2	Annamacharya College of Pharmacy	Bentham Books imprint

  
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New Boyanapalli, Rajampet, Annamayya Dist, A.P., India

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3	Giri rajasekhar Dornadula	Reconsideration of drug repurposing through artificial intelligence program for the treatment of the novel coronavirus	NA	NA	NA	International	2023	978-0-323- 90531-2	Annamacharya College of Pharmacy	Academic Press
4	Giri rajasekhar Dornadula	Artificial Intelligence Techniques to Restrain Fake Information	NA	NA	NA	International	2022	978-981- 19-2820-8	Annamacharya College of Pharmacy	Springer, Singapore

  
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## Development and Validation of Stability Indicating RP-UPLC Method for Quantitative Estimation of Safinamide Mesylate in Bulk and its Tablet Dosage Form

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### Abstract

Currently, there was an increasing interest on the development of a simple, rapid and sensitive method for safinamide mesylate due to its well- documented anti parkinsonism activity. This study aims to develop and validate a UPLC method for determination of the Safinamide mesylate in bulk and its tablet dosage forms. The chromatographic separation was achieved by using an ACQUITY BEH C18 column (50 mm × 2.1 mm, 1.7 µm; Waters), with an isocratic elution of 0.02 M diammonium hydrogen phosphate buffer pH 9.0 and Acetonitrile (80:20 v/v), at a flow rate of 0.25 ml/min with the help of UV detection at 272nm. The results of the analysis were validated statistically as per the International Conference on Harmonization (ICH) guidelines. Linearity studies were carried out in the range of 10 - 60 µg/ml and the linear response ( $r^2$ ) was found to be 0.9999 with limits of detection and quantification being 0.081 and 0.271µg, respectively. The precision was performed by analysis of standard and sample solutions of SAF at working concentration level for six times. The % RSD values of the system and method precisions were found to be 0.527 and 0.324 respectively. Then, the precision of the method was confirmed by intra-day and inter-day analysis. The % RSD value of the intra-day and inter-day precisions were found to be 0.324, 0.531 respectively. Recovery studies were performed for determining accuracy of the method and the percentage


recovery was found to be 99.48-100.85%. The Robustness were performed at different flow rates and different temperatures, and the % RSD value were found to be 0.5965, 0.6276 respectively. Thus, a highly sensitive, simple and the stability indicating method were developed for the estimation of SAF in bulk and tablet dosage forms.

**Keywords:** Safinamide Mesylate, ICH Guidelines, ACQUITY BEH C18 Column, Ultra Performance Liquid Chromatography, Diammonium Hydrogen Phosphate Buffer

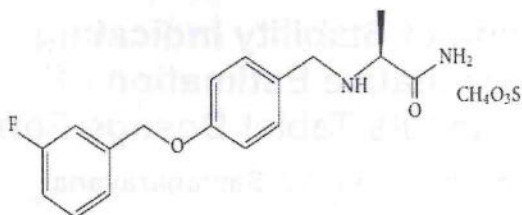
### Introduction

Safinamide Mesylate (SAF) is a novel sodium and calcium channel blocker, capable with selective and reversible inhibition of monoaminooxidase type B (MAO-B) (1-7), chemically, it is (S)-(+)-2-[4-(3-fluoro benzyloxy benzyl amino) propanamide] methane sulfonate. (Figure: 1) which acts as Neuro protective with antiparkinsonian and anticonvulsion activity for the treatment of Parkinson's disease (8-11). Along with these activities, a well documented literature reports that there are few analytical methods like HPLC [12-14], HPTLC [15], LC-MS/MS (16, 17) are available for quantitative estimation and therapeutic effectiveness of SAF in bulk as well as formulation.

The development and validation of analytical methods for the accurate detection and quantification of active compounds in

  
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**Figure 1.** Safinamide Mesylate

pharmaceutical samples with absence of interference of degradation products are a key consideration in the pharmaceutical field. Assay of SAF was mainly focused on its quantification by UPLC, mainly due to reward in terms of sensitivity and accuracy. The use of UPLC technology has been proposed to get out of the drawbacks like reducing the time of analysis and accordingly decreasing the environmental impact by reducing solvent consumption.

Herein we described the UPLC method development and validation of SAF in bulk and its tablet dosage forms for quantification and it was optimized and validated as per the ICH guidelines (18-20).

#### Material and Methods

**Chemicals and Reagents:** The SAF reference standard with a purity greater than 98% was gratis from Radiant Pharma, Mumbai, India. SAF tablets were purchased from commercial stores within their shelf life period. The reagents and solvents used (Acetonitrile, diammonium hydrogen phosphate) were of AR grade obtained from Merck Chemicals, Mumbai, India.

**Instrumentation and UPLC Conditions:** The estimation of SAF was performed using Waters' Acquity UPLC system (Waters, Milford, MA, USA) equipped with a quaternary gradient pump, auto sampler, column oven, and photodiode array detector and empower 2 software was used for analysis. An ultrasonic device, a sensitive balance, Sartorius analytic balance and a pH meter, glass electrode, were used for the

preparation of solutions. Thermo Scientific Heraeus microbiological incubator, Digital Dry Baths, Labnet International and Spectroline E-Series UV lamp were used for stability studies.

0.02 M diammonium hydrogen phosphate and acetonitrile in a ratio of 80:20 v/v was selected as the mobile phase and the pH was adjusted by adding liquid ammonia (pH=9). The detector wavelength was set at 272nm. The flow rate is maintained at 0.25 ml/min, at an ambient column temperature with 5  $\mu$ L injection volume.

**Preparation of Mobile Phase:** Freshly prepared solutions of 200 ml acetonitrile and 800 ml of 0.05 M ammonium acetate are transferred into a 1000ml standard flask and mixed well. Adjust the pH to 9 by adding a liquid ammonia solution with constant stirring and then filtered through 0.45 mm membrane filters.

**Preparation of Stock Solution:** The stock solution of SAF was prepared by taking 100mg of standard and transferred into a 100 ml standard flask having mobile phase and stirred continuously about 15 to 30 min. Finally made the final volume with the same solution to get the desired concentration (1mg/mL).

**Preparation of Standard Solutions:** 4 ml of stock solution of SAF was transferred with a calibrated pipette into a 100 ml flask. The final volume was made with the diluent to get 40 $\mu$ g/mL.

**Preparation of Sample Solution:** 20 tablets of SAF were weighed, powdered and transferred 673.45mg of powder which is equivalent to 100 mg of SAF into a 100ml standard flask with the mobile phase. Mix thoroughly using a stirrer for half an hour and made the final volume and filtered through a 0.45 mm filter. Further dilutions were made with the same diluent to get the optimum concentration of 40 $\mu$ g/mL.

**UPLC Method Validation:** UPLC developed method was validated by performing specificity/ selectivity, linearity, precision, accuracy, stability and robustness according to ICH guidelines for the estimation of SAF in bulk and tablet dosage form.



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**International Conference on**  
Current Sustainable Agricultural, Biotechnological, Nutritional and  
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**(SABINP-2023)**

**17th ANNUAL CONVENTION OF ASSOCIATION OF BIOTECHNOLOGY AND PHARMACY**  
19-21 December, 2023

Jointly organized by  
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**about KLEF**

The Koneru Lakshmaiah Charities was established as a trust in the year 1980 with its official address at Museum road, Government, Vijayawada, Andhra Pradesh 520 002 and started K.L. College of Engineering in the Academic year 1990-91 which was upgraded to K.L. College of Engineering Autonomous in 2006 by UGC, and was declared as a Deemed to be University in 2009 by UGC, MHRD Govt of India. In 2012 as a Deemed to be University the institution was accredited by NAAC with A Grade and later in 2016, was re-accredited by NAAC with A++ grade. In 2019 UGC, MHRD declared this institution as Category I Institution.

The Department of Biotechnology was established in 2002, and is sponsored by DST-FIST, ICMR, UGC, DBT and DST-TB with research grants worth Rs. 22 crores. College of Pharmacy was established in 2016 is PCI approved and has collaborations with IIPER, AIIMS and NRI Medical College. College of Agriculture was established in 2020 following AMBRAU syllabus approved by ICAR and supported by DST-STI grant for Digitalized Agriculture @ASBL and so on. The Department of Food Technology established in 2012 following IIT and IITM model syllabus is aimed to flourish in near future in coordination with the other life science streams in campus and also with the industry. The life science streams at KLEF possess laboratory facilities equipped with sophisticated instruments like SEM, XRD, HPLC, FTIR, RT-PCR, ELISA, LC-MS, GC-MS, Mass Spectrophotometry and Bioreactors.

**about ABAP**

The Association of Biotechnology and Pharmacy (ABAP) is a forum for scientists to come together to discuss and find scientific solutions to the problems of society. The annual meetings will help the members to share their knowledge and publish their research knowledge particularly by members and fellows of the Association. The association plans to organize symposia, seminars and workshops on current developments of biotechnology and pharmacy particularly on the subject of current scientific interest.

**vision and objective**

The International Conference on Current Sustainable Agricultural, Biotechnological, Nutritional and Pharmaceutical Interventions to combat global challenges is certainly, a complex topic that covers a broad range of disciplines. It aims to bring together experts, researchers, scholars, and practitioners from various fields related to agriculture, biotechnology, food science, chemistry, and pharmaceutical science. The conference provides a platform for participants to share their latest research findings, exchange knowledge, and discuss the recent trends and advancements in these domains. Throughout the conference, it would be valuable to integrate discussions of social, economic, and environmental justice, considering how these sustainable innovations can be made accessible and beneficial for all communities. **Sustainable Agriculture:** Given the increasing concern for food security and environmental sustainability, the conference may address the latest practices and technologies in sustainable farming, precision agriculture, climate-smart agriculture, and permaculture. Discussions might include the use of renewable energy in agriculture, water management, crop diversity, and soil conservation.

**by objectives of the conference include:**

- Knowledge exchange: Participants can present their research papers, case studies, and innovative ideas to share their findings and advancements with the academic and professional community.
- Networking: The conference offers an opportunity for attendees to establish connections with experts and peers from different parts of the world, fostering collaborations and partnerships.
- Educational insights: Workshops, keynote speeches, and panel discussions conducted by eminent personalities can provide valuable insights and knowledge updates in the respective fields.
- Collaboration opportunities: Academics, researchers, and industry professionals can explore potential collaborations and partnerships to address challenges in agriculture, biotechnology, food science, chemistry, and pharmaceutical science.
- Resilience to human welfare: Emphasizing the importance of research in these fields to benefit human well-being, the conference focuses on how the latest trends and developments can contribute to improving human life and global welfare.

Participants may include researchers, academicians, scientists, industry professionals, policymakers, and students who are interested in contributing to and staying updated with the latest developments in these fields. Overall, the International Conference on Current Sustainable Agriculture, Biotechnological, Nutritional, and Pharmaceutical Interventions to combat global challenges serves as a dynamic platform for knowledge dissemination and fostering collaborations to address global challenges and improve human welfare through scientific advancements.

**The conference is likely to cover a broad range of topics, such as:**

**Sustainable Agricultural Practices:**

- Innovations in Precision Agriculture
- Climate-Smart Agriculture
- Regenerative Agriculture & Soil Health
- Circular Agriculture & Resource Efficiency
- The Role of Agriculture in Global Carbon Sequestration

**Biotechnological Advances:**

- Applications of CRISPR in Agriculture and Medicine
- Synthetic Biology and Bioengineering for Sustainable Development
- Advances in Genomic Research
- Biotechnology in Waste Management and Biofuels Production

**Nutritional Interventions:**

- Food Systems for Improved Nutrition
- Addressing Malnutrition in all its Forms: Overnutrition and Undernutrition
- Nutrigenomics: The Role of Genomics in Personalized Nutrition
- Nutrient-Fortified and Biofortified Foods

**Pharmaceutical Interventions:**

- Personalized Medicine and Pharmacogenomics
- Rural Vaccination Strategies and Global Health
- Addressing Antimicrobial Resistance
- Drug Discovery and Development for Neglected Diseases

**Cross-Cutting Themes:**

- Global Health and Climate Change: The Interplay
  - The Role of Digital Technology in Agriculture, Nutrition, and Healthcare
  - Food Security and Climate Resilience
  - One Health Approach: Interconnectedness of Human, Animal, and Environmental Health
- These themes should generate insightful discussions and meaningful outcomes for the conference participants.

**Submission of Abstracts**

Abstracts (500-350 words) related to the above areas are invited through email only (sahino2023@gmail.com) in MS word format. Abstracts submitted for competitive session should specify under which category it is being submitted and with below 30 years category need to submit the date of birth certificate. Acceptance of the submissions for presentation will be communicated to the authors within two weeks after the submission. An official letter of invitation will be sent to foreign delegates for obtaining visa; and attend the conference.

**Important Dates to Remember**

- Abstract submission last date : November 15, 2023
- Acceptance of abstracts : December 05, 2023
- Registration last date : December 05, 2023

**Invitation of Nominations to 2023-ABAP Awards**

The Association of Biotechnology and Pharmacy invites nominations for the following awards from the eligible talented people with proven track record and achievements on or before September 30, 2023 in the prescribed format.

1. Life Time Achievement Award in Biotechnology, for the outstanding Scientist in the field of Biotechnology and related areas of Biology.
2. Life Time Achievement Award in Pharmacy, for the outstanding Scientist in the field of Pharmacy and its related areas.
3. Tatyasaheb Industrial Biotechnologist Award (Prathasa Industries Limited Memorial Gold Medal established by Dohnata Research and Development Center, Hyderabad, India), for outstanding young Scientist or Technocrat in the field of Industrial Biotechnology whose research having industrial relevance.
4. ABAP Gold Medal for Advanced Research in Nanoscience and Technology (Sri. C. L. Narasimha Rao, Hyderabad, India Gold Medal), for outstanding Scientist in the field of Nanoscience and Technology.

**Gold Medals and Scientist Awards**

- 1) ABAP - Young Scientist A wards - 1 Nos. - 1 Gold Medal + 2 A wards (Below 30 years category)
  - 2) ABAP - Young Scientist A wards - 1 Nos. - 1 Gold Medal + 2 A wards (Above 30 years category)
  - 3) ABAP - Junior Scientist A wards - 5 Nos (For UG, PG students and scholars - Poster presentation)
- The nominations will be scrutinized and assessed by the duly constituted committee for all the awards. The winners of the award have to personally participate compulsory in the 17<sup>th</sup> Annual Convention of Association of Biotechnology and Pharmacy and International Conference being held at K L University, Vaddeswaram, Guntur Dt., Andhra Pradesh, India, during 19-21 December, 2023 and need to give a talk on their research findings during the Annual Convention. If they fail to attend the meeting, the award will be withdrawn. For details of Annual Convention, contact Prof.K. Shrinivasulu Reddy, Food Technology, K. L. University, Vaddeswaram, Guntur dt. India (sahino2023@gmail.com). The format of ABAP-2023 awards application can be downloaded from the website of association (www.abap.co.in). The application for nomination should reach through email to: Prof. G.Gurusubramanian, Dept. of Zoology, Mizoram University, Aizawl, Mizoram, India (gurusubmanu@gmail.com) on or before September 30, 2023.

**Proceedings of the Conference**

Accepted full abstract and papers will be published in proceedings of the conference. Selected papers will be published in a Special Issue journal.

**Registration Fee:**

Registration Fee to be paid in favour of K L University, Account number: 62270957456, State Bank of India, Vaddeswaram Branch, and IFSC CODE: SBIN0027361

Registration fee	Rs. 1000/-
For Accompanying persons	Rs. 750/-
(Without conference material)	
For Foreign delegates	US \$ 50

**Awards presentation**

Winners will be announced on the final day of the conference and awards will be presented at the valedictory function. The candidate's presence is required to receive the award. If the presenting author is not the Principal Investigator, mentor (research supervisor) will be requested to accompany him/her to receive the award.

**Young Scientist Awards Competition**

Researchers below 30 years of age (proof of age required) and above 35 years are eligible to participate in the oral presentation competition. Candidates will be given 10 minutes for their presentation including questions from participants.

**Poster Presentations**

There is no age limit for the poster presentation. The poster may have multiple authors but only presenting author will be allowed at the poster for the competition.

**How to reach K L Deemed to be University**

K L Deemed to be University is located in between Vijayawada and Guntur cities of Andhra Pradesh (11 kms away from Vijayawada) and (32 kms away from Guntur). Vijayawada is the new capital city of Andhra Pradesh situated on the banks of river Krishna and well connected by air, train and bus. The nearest airport is Vijayawada (28 kms) and Hyderabad (290 kms). The nearest rail and bus station is Vijayawada (10 kms) and Guntur (32 kms).



## CHAPTER 11

## Breakthrough in Management of Cardiovascular Diseases by Artificial Intelligence in Healthcare Settings

Lakshmi Narasimha Gunturu<sup>1,\*</sup>, Girirajasekhar Dornadula<sup>2</sup> and Raghavendra Naveen Nimbagal<sup>3</sup>

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**Abstract:** The cardiovascular system includes the heart and its associated blood vessels. Disorders of this cardiac system are called Cardiovascular disorders (CVD). Management of CVDs is often complex due to challenges like inadequate patient care, readmissions, low cost-effectiveness, and cost reductions in preventions, treatments, and lifestyle modifications. Hence, to overcome these challenges, Artificial Intelligence (AI) is being developed. They addressed emerging problems in clinical and health care settings and had a tremendous impact on the public. Implementation of AI in cardiovascular medicine affects more on new findings. It also provides a high level of supporting evidence that may be useful within the evidence-based research paradigm. A review of available free full-text literature in the PubMed database was carried out to study the influence of AI on health care settings. This work reviews AI-based algorithms used in cardiac practice and the applications of AI in cardiovascular medicine in terms of interpretation of results and medical image analysis.

**Keywords:** Algorithms, Applications, Artificial Intelligence, Cardiovascular Disorders, Healthcare.

### INTRODUCTION

Artificial intelligence is a technology-based approach established in the mid-1950s. It is the trendiest technology in the contemporary world due to the imitating nature of human intelligence. Artificial means discovered by humans and intelligence represents thinking ability. This covers the aspects like machinery/systems/algorithms based on beneficial results in making decisions.

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## **Computational Intelligence for Data Analysis**

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# MACHINE INTELLIGENCE FOR INTERNET OF MEDICAL THINGS: APPLICATIONS AND FUTURE TRENDS

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## Chapter 3 - Reconsideration of drug repurposing through artificial intelligence program for the treatment of the novel coronavirus

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### Abstract

The coronavirus caused by the severe acute respiratory syndrome 2 (SARS-CoV-2) virus that began in December 2019 in Wuhan, China, created havoc among the public and healthcare professionals. Since its outbreak, there have been reported many deaths globally. Researchers are trying out their best for potential drug targets for this virus. During this drug discovery process, technology was widely used to provide quick and efficient output. Among those technologies, artificial intelligence (AI)-based methods had much impact concerning drug discovery approaches. Of those methods, AI-based drug repurposing or repositioning is the area where new research is going on. This method utilizes existing or shelved drugs to provide accurate therapy for the virus. Therefore, in this review, we explained the different AI algorithms used in the present days for drug discovery and drug repurposing approaches by using AI in the literature for the recognition of active molecules toward the pandemic management. This chapter also describes the various drug molecules at the repurposing stage and their associated challenges toward the evolution of efficient treatment candidates for the coronavirus.

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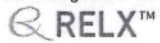
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## Description

*Artificial Intelligence in Healthcare and COVID-19* showcases theoretical concepts and implementational and research perspectives surrounding AI. The book addresses both medical and technological visions, making it even more applied. With the advent of COVID-19, it is obvious that leading universities and medical schools must include these topics and case studies in their usual

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Discusses the fundamentals and theoretical concepts of applying AI in healthcare pertaining to COVID-19  
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# Artificial Intelligence Techniques to Restrain Fake Information

[Lakshmi Narasimha Gunturu](#) , [Kalpana Pamayyagari](#),  
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[Nimbagal](#)

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## Abstract

In the current world, there has been an upsurge in the use of social networking sites like Facebook, WhatsApp, Twitter, etc. These are considered suitable sites for the exchange of messages and sharing pictures and videos. Besides providing entertainment to the users, sometimes the information circulating on these platforms may be



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