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Volume 48, December 2023, 101046

Data Article

Synthesis and biological evaluation of amide derivatives of quinazoline-thaizole-oxazole as anticancer agents

Suresh Babu Kokkiligadda [a] [b], Sivanadh Musunuri [b], Bhimcharan Maiti [a], M.V.Basaveswara Rao [b], Nalla Somaiah [c]

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https://doi.org/10.1016/j.cdc.2023.101046

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Abstract

A new series of different quinazoline-thiazole-oxazole amide derivatives with aryl linkages (**10a–j**) has been designed and synthesised. Further, The preliminary anticancer activity of these derivatives was also tested using the MTT assay on four human cancer cell lines, including breast cancer (MCF-7), lung cancer (A549), colon cancer (Colo-205), and ovarian cancer (A2780). Etoposide, a well-known chemotherapeutic treatment, has been utilized as the reference drug. When compared to etoposide, the majority of the evaluated drugs showed moderate-to-good activity. Five of these (**10c, 10d, 10e, 10f, and 10j**) showed the most powerful activity. One compound (**10d**) in particular, shown better activity.

International Journal of Applied Pharmaceutics

ISSN- 0975-7058 Vol 15, Issue 5, 2023

Original Article

A STABILITY, ACCURACY, AND ROBUSTNESS REPRESENTING LIQUID CHROMATOGRAPHIC METHOD FOR THE QUANTIFICATION OF ZANUBRUTINIB AND ITS SPECIFIED IMPURITIES

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Received: 28 Apr 2023, Revised and Accepted: 29 Jun 2023

ABSTRACT

Objective: An innovative RP-HPLC isocratic method was established and then validated using Zanubrutinib and its specified impurities (Impurity-1, Impurity-2, Impurity-3, Impurity-4, and Impurity-5).

Methods: In this method, effective chromatographic separation was given an X-Bridge Phenyl column measuring 250 mm x 4.6 mm, packed column with 5µ as a particle size. Acetonitrile, 1% Ortho Phosphoric acid (pH: 2.7), and methanol in the volume ratios 40, 40, and 20 were utilized as a mobile phase at room temperature with an optimized 1.0 ml/min flow rate. Wavelength was detected at 225 nm by using a PDA detector.

Results: Retention times of zanubrutinib and its specified impurities were recorded at 13.284, 4.730, 6.816, 9.583, 10.726, and 12.287. Moreover, other parameters USP tailing is good, USP plate count above 4000, and USP resolution is greater than are equal to 2. The Obtained peaks are homogeneous, hence the purity angle is less than the purity threshold and No Purity Flag. According to ICH guidelines, this method was validated. Zanubrutinib (5-75 µg/ml), their quantified impurity-1, impurity-2, impurity-4, impurity-5 (0.1-1.5 µg/ml), and impurity-3 (0.1-1.5 µg/ml) are proved through linearity method in between LOQ to 75 quantified levels. The % recovery was present between 100.18-95.85, 103.15-93.80, which is a good and acceptance range (amongst 85% and 115%) for drug and specified impurities. The limit of quantitation (LOQ) and limit of detection (LOD) values were assessed for zanubrutinib and its specified impurities were tabulated. These values were calculated using slope (σ) and standard deviation (SD) methods. Method precision (M. P.) and Intermediate (I. P.) Intermediate (I. P.) precision was estimated by evaluating several (six) samples of a similar batch as per the planned technique on the day and the next day, using different columns and systems. Robustness information significantly affects the resolution between Zanubrutinib and specified impurities. The remaining parameters do not impact the parameter's system suitability.

Conclusion: Hence this method was chosen for common analysis. Finally, the system-suitable parameters and validation parameters values are acceptable limits.

Keywords: Zanubrutinib**,** Specified impurities, Linearity recovery, and robustness

DOI: https://dx.doi.org/10.22159/ijap.2023v15i5.48213. Journal homepage: https://innovareacademics.in/journals/index.php/ijap

INTRODUCTION

A Zanubrutinib (ZBB/BGB-3111) is classified as a (BTK) Bruton tyrosine kinase inhibitor [1-3] through possible antineoplastic drug and it is given through mouth in the form of tablet dosage. This drug was approved by FDA in September 2019 [4], newly approved by the USA and Chinese drug supervisory establishments for the treatment of (MCL) mantle cell lymphoma [5], liver injury patients [6], and the commercial brand name is Brukinsa, ZBB is used for the action of grown people (adults) with mantle cell lymphoma (MCL) [7-10], who have consumed at minimum one prior treatment [11]. The molecular weight of zanubrutinib ($C_{27}H_{29}N_5O_3$) is 471.56. ZBB was soluble in various organic solvents like ethanol (C_2H_5OH, 5 mg/ml), dimethyl sulfoxide (DMSO, 5 mg/ml), and (DMF, 10 mg/ml) dimethyl form amide, carefully resolvable in aqueous buffers and insoluble in water. ZBB is stored at-20 °C and stable for ≥2 y [12].

Efficiency was assessed in (NCT 02343120) BGB-3111-AU-003, a phase I/II growth, open-label, multi-centre, the single-arm, global trial of B cell malignancies [13, 14], with 32 earlier treated Mantle-cell lymphoma (MCL) patients treated with ZBB managed per day two times with 160 mg [15-17] of ZBB or per day one time 320 mg of ZBB in the form of tablet dosage [18]. Zanubrutinib provides a higher response rate (84%) and prolonged progression-free survival (PFS) in patients with refractory or relapsed Mantle-cell lymphoma (MCL) [19]. These mixtures have established deep replies with several patients achieving undetectable minimal residual disease (uMRD) [20, 21].

Zanubrutinib (ZBB) inhibits (BTK) Bruton's tyrosine kinase by establishing a covalent bond [22] with cysteine 481 remainder in the (ATP) adenosine triphosphate binding abridged of BTK. Adenosine triphosphate binding specificity is generally seen with additional (BTK) Bruton's tyrosine kinase inhibitors. According to the ATP binding profile, zanubrutinib may similarly bind through varying affinities to unrelated and related (ATP) adenosine triphosphate binding kinases that have cysteine residue in this situation. Through blocking the BCR (B cell receptors) signaling pathway, zanubrutinib obstructs the trafficking proliferation, adhesion, and chemotaxis of malignant B cells [13, 14], eventually leading to a decrease in tumour magnitude.

The results of Song, Y *et al.* 2021 [23] give high demonstrate Complete Response (CR) and Overall Response Rates (ORR) in patients with refractory or relapsed Mantle-cell lymphoma (MCL).

A literature survey reported the isocratic analytical technique [24] for the specific determination of zanubrutinib using the RP HPLC technique. The current novel study was reporting technique for the simultaneous estimation of zanubrutinib (fig. 1) and their impurities (table 2) by using the RP-HPLC technique.

MATERIALS AND METHODS

Waters make instrument is HPLC (Software-Empower 2.0; Alliance model No: e2695) was used for the estimate of the Zanubrutinib and its impurities with the PDA detector. The HPLC grade, methanol, acetonitrile, OPA, Tri fluoro acetic acid, and formic acid used in the mobile phase preparation were purchased from Merck, India. Zanubrutinib is a drug which is present in the form of tablet dosage used in this investigation was purchased from the Mylan laboratory (R and D section), Hyderabad. The Zanubrutinib and their insufficient impurities standards were obtained from Ph. Eur and USP. Reaming impurities were purchased from the Mylan laboratory (R and D section), Hyderabad, India. Unified HPLC systems were

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Synthetic Communications

Volume 53, Issue 16, 2023, Pages 1333-1338

Research Article

Articles

An alternate synthesis of sporiolide B from (*R*)-glyceraldehyde

Suresh Babu Kokkiligadda [a] [b], Sivanadh Musunuri [b] [c], Tasqeeruddin Syed [d], Bhimcharan Maiti [a], Basaveswara Rao Mandava Venkata [b]

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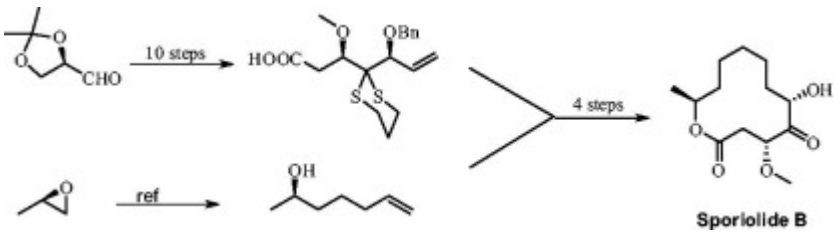
Outline | Share Cite

https://doi.org/10.1080/00397911.2023.2220443

Abstract

In this article, a novel synthetic route was described for the total synthesis of Sporiolide B from inexpensive and commercially available starting materials by a concise fourteen-step sequence in 6.50% overall yield. This convergent synthesis utilizes Grignard reaction, Asymmetric dihydroxylation, Yamaguchi macrolactonization and ring closing metathesis as the key steps.

GRAPHICAL ABSTRACT



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Physica B: Condensed Matter

Volume 606, 1 April 2021, 412827

Studies on near infrared emission of Yb^{3+} ions in a SeO_2 based glass system

Pathuri Naresh [a b], Valluri Ravi Kumar [c], A. Siva Sesha Reddy [a], M. Kostrzewa [d], N. Venkatramaiah [e], N. Krishna Mohan [f], V. Ravi Kumar [a], N. Veeraiah [a]

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https://doi.org/10.1016/j.physb.2021.412827

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Abstract

SeO_2 based glasses of the composition 39 PbO–(60-x) B_2O_3– $xSeO_2$:1.0 Yb_2O_3 (with $10 \le x \le 50$) was synthesized. Analysis of the results of structural studies of the samples revealed that the glass network consists of $[SeO_4]^{2-}$ and $[SeO_3]^{2-}$ units; the studies further indicated an increasing fraction of $[SeO_3]^{2-}$ units and decreasing concentration of $[SeO_4]^{2-}$ groups with increase of SeO_2 content. Optical Absorption (OA) and photoluminescence (PL) spectra have exhibited bands due to $^2F_{7/2} \rightarrow {}^2F_{5/2}$ and $^2F_{5/2} \rightarrow {}^2F_{7/2}$ transitions, respectively. Evaluated absorption and emission cross-sections and lifetime of the excited state of Yb^{3+} ions exhibited an increase with increase of SeO_2 content. Results of PL studies indicated nearly fourfold increase of PL output with increase of SeO_2 content up to 50%. Such increase is attributed to the increased concentration of isolated $[SeO_3]^{2-}$ pyramidal groups. Overall, the rise of SeO_2 content in Yb^{3+} doped PbO–B_2O_3–SeO_2 glass system facilitated the increase of PL emission of Yb^{3+} ions largely.

ScienceDirect

Journal of Non-Crystalline Solids

Volume 556, 15 March 2021, 120558

Emission features of Er^{3+} ions in an exotic SeO_2 based glass system

Pathuri Naresh [a b], M. Kostrzewa [c], M.G. Brik [d], N. Venkatramaiah [e], Valluri Ravi Kumar [f], N. Krishna Mohan [g], V. Ravi Kumar [a], M. Piasecki [h], N. Veeraiah [a]

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https://doi.org/10.1016/j.jnoncrysol.2020.120558

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Highlights

- SeO_2 based glasses of composition 39PbO-(60-x)B_2O_3-$x$$SeO_2$:1.0 Er_2O_3 were synthesized.
- IR/Raman spectra suggested growth of $[SeO_3]^{2-}$/$[SeO_4]^{2-}$ units' ratio with SeO_2 content.
- Analysis of OA spectra indicated J-O parameters to follow the order: $\Omega_2 > \Omega_6 > \Omega_4$.
- Green and NIR PL emission bands exhibited significant growth with SeO_2 content.
- PL spectra quantitatively analysed using kinetic rate equations.
- Gain co-efficient G(λ) of $^4I_{13/2} \rightarrow {}^4I_{15/2}$ transition indicated its lasing behaviour.

ScienceDirect

Journal of Luminescence

Volume 230, February 2021, 117666

Effect of modifier oxides on spectroscopic and optical properties of Pr^{3+} doped PbO-Ro_2O_3–WO_3–B_2O_3 glasses (with Ro_2O = Sb_2O_3, Al_2O_3, and Bi_2O_3)

R.N.A. Prasad [a d], Bathula Venkata Siva [b], Katta Neeraja [c], Nutakki Krishna Mohan [a d], Jose I. Rojas [e]

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https://doi.org/10.1016/j.jlumin.2020.117666

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Highlights

- Sb_2O_3, Al_2O_3, and Bi_2O_3 are added to Pr^{3+} doped lead tungsten borate glasses.
- Structural properties of these glasses can be identified by using IR spectra.
- Optical absorption, emission spectra and decay curves obtained at room temperature.
- Results suggest that the studied glasses have covalent nature.
- Pr^{3+} doped lead tungsten borate glass with Al_2O_3 shows highest quantum efficiency.

ScienceDirect

Optik

Volume 244, October 2021, 167563

Original research article

Structural and photoluminescence characteristics of PbO-M_2O_3(M_2O_3 =Al_2O_3, Sb_2O_3 and Bi_2O_3)-WO_3-B_2O_3: Sm_2O_3 glasses suitable for orange-red lasers

R.N.A. Prasad [a b], L. Srinivasa Rao [c], T. Anil Babu [d], K. Neeraja [e], N. Krishna Mohan [a]

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https://doi.org/10.1016/j.ijleo.2021.167563

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Highlights

- The structural modifications are addressed in terms of ionic radii of modifier oxides Al_2O_3, Sb_2O_3 and Bi_2O_3.
- Quantum efficiency (η) of the Sm^{3+} ions in Bi_2O_3 mixed glasses is found to be highest.
- The Sm^{3+} ions emit potential orange-red laser (≈ 600nm) by transition $^4G_{5/2} \rightarrow {}^6H_{7/2}$.

Abstract

Asian Journal of Chemistry; Vol. 33, No. 1 (2021), 1

ASIAN JOURNAL OF CHEM

https://doi.org/10.14233/ajchem.2021.22954

Synthesis and Characterization of Novel Analogues of

PEKETI RAJESH REDDY[1,2,*], SIVANADH MUSUNURI[2], D. RAMASEKHARA
V. SUBRAHMANYAM CHITTALA[1], P.V.N.S. MURTHY[1] and K. KRISHNA

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Received: 19 August 2020; *Accepted*: 25 October 2020; *Published online*: 1

The present work describes the identification, origin, synthesis, characterization and control of f
leucine analogue of lopinavir, isoleucine analogue of lopinavir, methyl analogue of lopinavir and d

Keywords: Lopinavir, Leucine, Isoleucine, Analogues.

INTRODUCTION

Lopinavir (**1**) is known to have efficacy for the inhibition of HIV protease and the inhibition of HIV infection [1]. It is chemically known as (2*S*,3*S*,5*S*)-2-(2,6-dimethylphenoxy-acetyl)amino-3-hydroxy-5-[2-(1-tetrahydropyrimid-2-only)-3-methyl butanoyl]amino-1,6-diphenyl hexane and marketed by Abbott laboratories with the combination of ritonavir in the brand name of Kaletra®.

Lopinavir is unsuccessful for the treatment of HIV infection when administrated unaided. Lopinavir is more successful for the inhibition of HIV protease and for the inhibition of HIV infection when combined with ritonavir [2]. Lopinavir with combination of ritonavir, is particularly effective for the inhibition of HIV infection when used in grouping with one or

A number of impurit
reported in literature [5-1
synthesis and characteriza
leucine, isoleucine, *N*-m
lopinavir are not reported y
of the related substances a
all possible analogues in lo
work, the four novel anal
synthesized and character
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EXP

The solvents and reag
sources and were used w

ScienceDirect

Journal of Luminescence

Volume 223, July 2020, 117171

Influence of modifier oxides on spectroscopic features of Nd_2O_3 doped PbO-Ro_2O_3–WO_3–B_2O_3 glasses (with Ro_2O_3 = Sb_2O_3, Al_2O_3, and Bi_2O_3)

R.N.A. Prasad [a], Bathula Venkata Siva [b], Katta Neeraja [c], N. Krishna Mohan [a], Jose I. Rojas [d]

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https://doi.org/10.1016/j.jlumin.2020.117171

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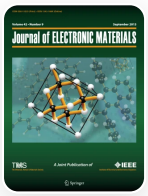
Highlights

- We study the effect of modifier metallic oxides on properties of glasses doped with Nd^{3+} ions.
- We study optical, luminescence and physical properties of PbO–Mo2O3–WO3–B2O3 glass.
- The density of the glasses varies non-linearly with the Nd2O3 content.
- The absorption spectra are examined based on Judd-Ofelt model: glasses are covalent.
- The glasses show intense, sharp emission bands, suitable for laser applications.

Optical Absorption and NIR Photoluminescence of Nd^{3+}-Activated Strontium Phosphate Glasses

Published: 25 August 2020

Volume 49, pages 6358–6368, (2020) Cite this article



Journal of Electronic Materials

Aims and scope

Submit manuscript

R. N. A. Prasad, N. Vijaya, P. Babu, N. Krishna Mohan & R. Praveena

Abstract

Strontium phosphate glasses with various concentrations of Nd_2O_3 have been prepared by melt quenching method. Absorption and photoluminescence spectra and lifetime measurements have been carried out to obtain the optical properties of these glasses.

Nd^{3+} ions exhibit a single exponential nature at lower concentrations, while they become

Carbon Letters
https://doi.org/10.1007/s42823-020-00165-7

Online ISSN 2233-4998
Print ISSN 1976-4251

ORIGINAL ARTICLE

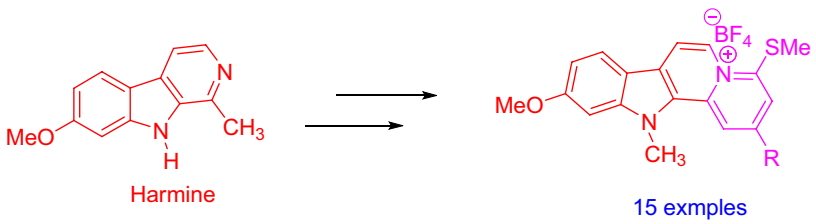
Synthesis of quinozilinium fluoroborate salts from harmine

Sivanath Musunuri[1] · Reddymasu Sreenivasulu[2] · Kit-Kay Mak[3] · Mallikarjuna Rao Pichika[3] · Mandava Venkata Basaveswara Rao[4]

Received: 25 May 2020 / Revised: 4 July 2020 / Accepted: 7 July 2020

Abstract
Molecules possessing harmine moiety are reported to exhibit marked fungicidal and bactericidal activities. In this study, various quinozilinium tetrafluoroborate salts were synthesized using acylic and cyclic oxoketene dithioacetals followed by cycloaromatization from Harmine. All of these synthesized compounds were characterized by ^{1}H NMR, ^{13}C NMR, Mass and CHN analysis. This methodology would find wide usage in the preparation of indolo quinozilinium -based library of small molecules useful for medicinal chemistry and in drug discovery.

Graphic abstract



Keywords Harmine · β-carboline · Quinozilinium tetrafluoroborate salts

1 Introduction

Peganum harmala (Zygophyllaceae) is the botanical name of the plant more commonly known as Syrian rue. Seeds and roots of this plant contains β-carboline alkaloids [1–4] mostly harmine, as well as harmaline, harmalol, harman, peganine, isopeganine, dipegene, vasicinone and deoxyvasicinone. Studies reported indicate that compounds, with harmine moiety exhibit remarkable fungicidal [5] and bactericidal properties. β-carboline skeleton as a key constituent of most naturally occurring indole alkaloids, has received consider able attention of medicinal chemists owing to their important properties. The bark of Annona foetida produces a pyrimidine substituted β-carboline alkaloid, *N*-hydroxy annomontine (**a**) (Fig. 1), which is identified to exhibit anti leishmanial activity [6]. Brunnein A (**b**) (Fig. 1) isolated from the fruiting bodies of agaricoid fungus Cortinarius brunneus [7, 8] also contains β-carboline skeleton in its structure. Nostocarboline, carbolineum alkaloid was isolated from the cyanobacterium Nostoc, and synthesized from norharmane. Bauerine A (**c**) (Fig. 1), Bauerine B (**d**) (Fig. 1), Bauerine C, new chloro containing β-carboline alkaloids were isolated from the terrestrial blue green alga Dichothrix baueriana [9]. Bauerine C, with activity against

Mallikarjuna Rao Pichika gave suggestions regarding towards the designing of scheme.

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Published online: 13 July 2020

Asian Journal of Chemistry; Vol. 32, No. 7 (2020), 1751-1755

ASIAN JOURNAL OF CHEMISTRY

https://doi.org/10.14233/ajchem.2020.22666

Synthesis and Characterization of Novel Analogues of Cefpodoxime Proxetil

PEKETI RAJESH REDDY[1,2,*], SIVANADH MUSUNURI[2], D. RAMASEKHARA REDDY[2], V. SUBRAHMANYAM CHITTALA[1], P.V.N.S. MURTHY[1] and K. KRISHNAMOHAN[1]

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Received: 9 February 2020; *Accepted*: 17 April 2020; *Published online*: 27 June 2020; AJC-19943

The present work describes the origin, identification, synthesis, characterization and control of four novel analogues of cefpodoxime proxetil, which are ethyl, methyl, propyl and *N*-propyl analogues of cefpodoxime proxetil.

Keywords: Cefpodoxime proxetil, Cephlosporin, Novel analogues.

INTRODUCTION

Cefpodoxime proxetil is a potent antibiotic and is of great therapeutic interest in the treatment of acute bronchitis, exacerbations, pneumonia, sinusitis, recurrence of chronic tonisillitis, pharyngitis and acute otitis media. Cefpodoxime proxetil (**1**) is chemically known as 1-(isopropoxycarbonyl-oxy)ethyl (*6R,7R*)-7-[(*Z*)-2-(2-amino-4-thiazolyl)-2-(methoxy-imino)acetamido]-3-methoxymethyl-3-cephem-4-carboxylate.

The presence of impurities in an Active Pharmaceutical Ingredient (API) drug substance will influence the quality and safety of the drug product. As per the regulatory guidelines of the International Conference on Harmonization (ICH), it is recommended that impurities more than 0.1% [1] should be identified and characterized. Impurities are required to check the analytical performance characteristics such as specificity, linearity, range, accuracy, precision, limit of detection (LOD), limit of quantification (LOQ), robustness, system suitability testing and relative retention factor [2].

In view of regulatory importance of the related substances in the API, a detailed study on all possible analogues in cefpodoxime proxetil was conducted. During the process development of cefpodoxime proxetil in the laboratory, we prepared possible, novel analogues of cefpodoxime proxetil. In the present work, the novel analogues of cefpodoxime proxetil were synthesized and characterized by spectroscopic techniques. The structures of four novel analogues of cefpodoxime proxetil *viz.* 1-(ethoxycarbonyloxy)ethyl-(*6R,7R*)-7-[(*Z*)-2-(2-amino-4-thiazolyl)-2-(methoxyimino)acetamido]-3-methoxymethyl-3-cephem-4-carboxylate (ethyl analogue of cefpodoxime proxetil), 1-(methoxycarbonyloxy)ethyl (*6R,7R*)- 7-[(*Z*)-2-(2-amino-4-thiazolyl)-2-(methoxyimino)aceta-mido]-3-methoxymethyl-3-cephem-4-carboxylate (methyl analogue of cefpodoxime proxetil, 1-(isopropooxycarbonyloxy)-ethyl-(*6R,7R*)-7-[(*Z*)-2-(2-amino-4-thiazolyl)-2-(methoxyimino)-acetamido]-3-methoxymethyl-3-cephem-4-carboxylate (propyl analogue of cefpodoxime proxetil) and 1-(propoxy-carbonyloxy)ethyl (*6R,7R*)-7-[(*Z*)-2-(2-amino-4-thiazolyl)-2-(methoxyimino)acetamido]-3-methoxymethyl-3-cephem-4-carboxylate (*N*-propyl analogue of cefpodoxime proxetil).

A number of impurities and analogues of cefpodoxime proxetil were also reported in literature [3-9]. To the best of our knowledge identification, synthesis and characterization of these four novel analogues are not reported in the literature.

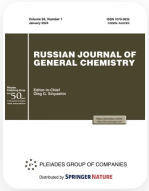
EXPERIMENTAL

Solvents and reagents were obtained from commercial sources and used without purification. ^{1}H and ^{13}C NMR spectral data were performed on Bruker-Avance 300-MHz, 500 MHz spectrometer in DMSO-d_6 & $CDCl_3$. The chemical shift values reported on the δ scale in parts per million (ppm), downfield from tetramethylsilane (TMS) as an internal standard. IR spectra

Synthesis and Anticancer Activity of 1,3,4-Oxadiazole-oxazolo[4,5-*b*]pyridine Derivatives

Published: 10 August 2020

Volume 90, pages 1331–1335, (2020) Cite this article



Russian Journal of General Chemistry

Aims and scope

Submit manuscript

Suresh Babu Kokkiligadda, Sivanadh Musunuri, Bhimcharan Maiti, M. V. Basaveswara Rao & Gattu Sridhar

Abstract

A number of 1,3,4-oxadiazole incorporated oxazolo[4,5-*b*]pyridine derivatives has been synthesized, characterized and tested for anticancer activity against four human cancer cell lines including breast cancer (MCF-7), lung cancer (A549), colon cancer (Colo-205), and ovarian cancer (A2780) using etoposide as a standard drug. All products demonstrate good anticancer activity, several compounds can be considered as promising anticancer agents.

physica status solidi (a) applications and materials science

Edited By:Stefan Hildebrandt, Deputy Editor Marc Zastrow

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REPRESENTATIONS OF SEMI LATTICE IN FACTOR CONGRUENCE ON PRE A*- ALGEBRA

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Received: Jan. 2020 Accepted: Feb. 2020 Published: Feb. 2020

Abstract: In this paper we define $\otimes$-Semi lattice on Pre A*-algebra A and prove that for each $a \in C(A)$ define $\beta_a = \{ (x,y) / a \vee x = a \vee y \}$ is a factor congruence on A and $\beta_{a^\otimes}$ is direct complement of β_a and also prove that β is a factor congruence on A iff $\beta = \beta_x$, for some $x \in C(A)$.

Keywords: Pre A*-algebra, $\otimes$-Semi lattice, central element, factor congruence.

AMS subject classification (2000): 06E05, 06E25, 06E99, 06B10.

Introduction: In 1994, P. Koteswara Rao[2] first introduced the concept A*-Algebra $(A,\wedge,\vee,^*,(-)^{\%},(-)_\pi,0,1,2)$ not only studied the equivalence with Ada, C-algebra, Ada's connection with 3-Ring, the If-Then-Else structure over A*-algebra and Ideal of A*-algebra. . In 2000, J. Venkateswara Rao [5] introduced the concept of Pre A*-algebra $(A,\wedge,\vee,(-)^{\%})$ as the variety generated by the 3-element algebra A = {0,1,2} which is an algebraic form of three valued conditional logic.In [6] Satyanarayana et al. generated Semilattice structure on Pre A*-Algebras . In [7] Satyanarayana.A, et.all derive necessary and sufficient conditions for pre A*-algebra A to become a Boolean algebra in terms of the partial ordering.

1. Preliminaries: In this section we concentrate on the algebraic structure of Pre A*-algebra and state some results which will be used in the later text.

1.1. Definition: An algebra $(A,\wedge,\vee,(-)^{\tilde{}})$ where A is a non-empty set with $1,\wedge,\vee$ are binary operations and $(-)^{\tilde{}}$ is a unary operation satisfying

(a) $x^{\tilde{}\tilde{}} = x \quad \forall x \in A$
(b) $x \wedge x = x, \quad \forall x \in A$
(c) $x \wedge y = y \wedge x, \quad \forall x, y \in A$
(d) $(x \wedge y)^{\tilde{}} = x^{\tilde{}} \vee y^{\tilde{}} \quad \forall x, y \in A$
(e) $x \wedge (y \wedge z) = (x \wedge y) \wedge z, \quad \forall x, y, z \in A$
(f) $x \wedge (y \vee z) = (x \wedge y) \vee (x \wedge z), \quad \forall x, y, z \in A$
(g) $x \wedge y = x \wedge (x^{\tilde{}} \vee y), \quad \forall x, y \in A$ is called a Pre A*-algebra.

J Pharm Biomed Anal. 2004 Jun 29;35(4):951-7. doi: 10.1016/j.jpba.2004.02.037.

Isolation, synthesis and characterization of impurities in celecoxib, a COX-2 inhibitor

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PMID: 15193741 DOI: 10.1016/j.jpba.2004.02.037

Abstract

During the impurity profile of Celecoxib, four polar impurities (impurity I, II, III and IV) and one non-polar impurity (impurity V) with respect to Celecoxib were detected by HPLC. LC-MS has been employed in this impurity profile study. The three polar impurities (I, II and III) were found to be process related while impurities (IV and V) turned out to be isomers. The impurities III, IV and V were isolated with the help of preparative HPLC. The structure of impurities III, IV (ortho-isomer) and V (regio-isomer) were confirmed as [5-(4-methylphenyl)-3-trifluoromethyl-1H-pyrazole], 4-[5-(2'-methyl phenyl)-3-(trifluoromethyl)-1H-pyrazol-1-yl] benzenesulfonamide, and 4-[4-(4'-methylphenyl)-3-(trifluoromethyl)-1H-pyrazol-1-yl]-benzenesulfonamide, respectively. The structures of impurities I, II, III and IV were confirmed by synthesis and structural characterization using spectral data. However, the impurity V was not synthesized.

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Identification, synthesis, and characterization of potential genotoxic impurities of sildenafil citrate drug substance

P. Rajesh Reddy, Sivanadh Musunuri, D. Rama Sekhara Reddy, V. Subrahmanyam Chittala, V. N. S. Murthy P & K. Krishnamohan

Future Journal of Pharmaceutical Sciences **6**,
Article number: 83 (2020)

Abstract

Background

Sildenafil is a selective inhibitor of cyclic guanosine monophosphate (cGMP)-specifil phophodiesterase type 5 (PDE5). Sildenafil enhances the effect of nitric oxide by inhibiting phosphodiesterase type 5, which is responsible for the degradation of cGMP in

PAPER

Neodymium-doped magnesium phosphate glasses for NIR laser applications at 1.05 μm

Prasad R N A[1], Praveena R[2], Vijaya N[3], Babu P[4] and Krishna Mohan N[1]

Published 24 July 2019 • © 2019 IOP Publishing Ltd

Materials Research Express, Volume 6, Number 9

Citation Prasad R N A *et al* 2019 *Mater. Res. Express* **6** 096204

DOI 10.1088/2053-1591/ab318e

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1. Received 8 April 2019
2. Revised 19 June 2019
3. Accepted 11 July 2019
4. Published 24 July 2019

Method: Single-anonymous
Revisions: 1
Screened for originality? Yes

REPRESENTATION OF LATTICES ON PRE A*-ALGEBRA

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Received: Sep. 2019 Accepted: Oct. 2019 Published: Nov. 2019

Abstract: This paper analyzes the notion of lattice structure on Pre A*-algebra. It has been derived the corresponding properties of the Pre A*-lattice L. Furthermore, identified a congruence relation β_a on L and proved that the set of all congurences on L is a distributive Pre A*-Lattice. Also described an ideal on Pre A*-lattice L and shown that $F(L)$ the set of all ideals of L is a distributive Pre A*-lattice under the set inclusion. Also introduced the notion of ideal congruence on Pre A*-lattice and derived its various significant properties.

Keywords: A*-Algebra, Pre-A*-Algebra, Boolean Algebra, Partially Ordered Set, Homomorphism.

AMS Subject Classification (2000): 06E05, 06E25, 06E99, 06B10.

Introduction: J.Venkateswara Rao (2000) introduced the concept Pre A*-algebra $(A, \wedge, \vee, (-)^{\cdot})$ analogous to C-algebra as a reduct of A*- algebra. Further A. Satyanarayana (2012) established the concept of Ideals, Semilattice structures and Ideal congruences on Pre A*-algebra. Boolean algebra depends on two element logic. C-algebra, Ada, A*- algebra and our Pre A*-algebra are regular extensions of Boolean logic to 3 truth values, where the third truth value stands for an undefined truth value. The Pre A*- algebra structure is denoted by $(A, \wedge, \vee, (-)^{\cdot})$ where A is non-empty set $\wedge, \vee$ are binary operations and $(-)^{\cdot}$ is a unary operation.

In this paper we identify for any subset L of a Pre A*-algebra, a Pre A*-lattice. We present various examples of Pre A*-lattices. We offer several properties of Pre A*-lattices. We define sub Pre A*-lattice, distributive Pre A*-lattices and homomorphism of Pre A*-lattices. We confer congruence relation β_a on L and prove that the set of all congurences of the form β_a forms a distributive Pre A*-Lattice . We also introduce the concept of Ideal, Ideal congruences on Pre A*-lattice and derived some important properties of these.

1. Preliminaries: In this section we concentrate on the algebraic structure of Pre A*-algebra and state some results which will be used in the later text.

1.1. Definition: An algebra $(A, \wedge, \vee, (-)^{\sim})$ where A is a non-empty set with $1, \wedge, \vee$ are binary operations and $(-)^{\sim}$ is a unary operation satisfying

(a) $x^{\sim\sim} = x \quad \forall x \in A$
(b) $x \wedge x = x, \quad \forall x \in A$
(c) $x \wedge y = y \wedge x, \quad \forall x, y \in A$
(d) $(x \wedge y)^{\sim} = x^{\sim} \vee y^{\sim} \quad \forall x, y \in A$

IOSR Journal of Business and Management (IOSR-JBM)
e-ISSN: 2278-487X, p-ISSN: 2319-7668. Volume 20, Issue 12. Ver. II (December. 2018), PP 52-57
www.iosrjournals.org

Innovative Performance Through Entrapreneurial Marketing - A Case Study of SME Manufacturing In Guntur And Krishna Districts, Andhra Pradesh.

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Abstract: *Merging two formerly distinct disciplines, the term entrepreneurial marketing is used to describe the marketing processes of firms pursing opportunities in uncertain market circumstances, often under constrained resource conditions. The aim of the study is to identify the effect of entrepreneurial marketing on firm's innovative performance. The hypothesized relations between dimensions of entrepreneurial marketing and innovative performance are tested with data collected through structured questionnaires administered face-to-face to managers of 560 SMEs in the manufacturing industry. Analyses results revealed that pro-activeness, innovativeness, customer intensity, resource leveraging dimensions of entrepreneurial marketing are positively related with innovative performance.*

Key words: - *Entrepreneurial marketing; Innovativeness; Performance; Small and medium –sized; enterprises.*

Date of Submission: 30-11-2018 Date of acceptance: 15-12-2018

I. Introduction

Merging two formerly distinct , the term entrepreneurial marketing is used to describe the marketing processes of firms pursing opportunities in uncertain market circumstances often under constrained resource conditions (Becherer et al .,2006). Morris et al (2002:5) define the term "entrepreneurial marketing" as "the proactive identification and exploitation of opportunities for acquiring and retaining profitable customers through innovative approaches to risk management, resource leveraging and value creation". Entrepreneurial marketing is characterized as an organizational orientation having seven underlying dimensions, namely, pro-activeness, customer intensity, resource leveraging, and value creation (Morris et el., 2002).

Based on the idea that entrepreneurial marketing is appropriate for small scale enterprises, the aim of this study is to explore the relationship between entrepreneurial marketing and innovative performance of the small and medium sized enterprises (SMEs) in Guntur and Krishna Districts.

The article proceeds in the following manner. First, we briefly review the literature regarding entrepreneurial marketing and innovativeness. We develop hypotheses concerning the effects of dimensions of entrepreneurial marketing on SMEs innovative performance. Next, we test our hypotheses using data collected from a sample of 560 manufacturing SMEs using convenient sampling technique via a structured questionnaire derived from the literature. We explain in detail the data collection method and analytical procedures.

II. Literature Review

2.1 Entrepreneurial Marketing

Firms operating in an entrepreneurial context are not well served by the theories, and tools of "mainstream" marketing (Hills et al., 2008) and the SMEs approach to marketing may not fit established theories, successful SMEs are able to capitalize on their unique benefits of "smallness" (Jones and Rowley, 2011).Entrepreneurial marketing is defined as effectual action or adaption of marketing theory to the particular needs of the small business (Becherer et al., 2006). While some authors argue that it can be described as marketing activities with an entrepreneurial mindset, irrespective of firm size or age (Kraus et al., 2010), it is widely accepted that the concept is particularly appropriate to the small business context (Jones and Rowley , 2011; Gilmore and Carson , 1991). According to Bjerke and Hultman (2002), entrepreneurial marketing is the marketing of small firms growing through entrepreneurial. As SMEs face some limitations such as having few major customers, limited resource in business and marketing; the influence of the entrepreneurial , the lack of formal organizational structures or formal systems of small and medium size enterprises. Kraus et al., (2010)

IC Value 2016 : 61.33| SJIF Impact Factor(2018) : 8.003| ISI Impact Factor (2017):1.365 (Dubai)

Research Paper | Volume - 6, Issue- 11, November 2018 |e-ISSN : 2347 - 9671| p- ISSN : 2349 - 0187

EPRA International Journal of Economic and Business Review - Peer Reviewed Journal

CUSTOMER RELATIONSHIP MANAGEMENT AT MORE SUPER MARKET

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ABSTRACT

In this day and age, customers are regarded as an article of trade. With the growth of Marketing era the Customer Relationship Management (CRM) is very much advanced and became popular in India. CRM became crucial to cope up with exceeding competitive global market. Customer Relationship Management is a strategy for managing and nurturing a company's interactions with customers and sales prospects. When an implementation is effective, people, processes, technology work in synergy to develop and strengthen relationships, increase profitability, and reduce operational costs. Customer Relationship Management is a most effective tool for maintaining good relationship with the customers. It plays an effective role in attracting the new customers to the company. Customer relationship management is a corporate level initiative, focusing on creating and maintaining relationships with customers.

Management of effective relationship with the customers is very crucial to achieve sustainable competitive advantage in the business scenario. Understanding and responding the customer expectation serve as the core for developing, nurturing and sustaining long term relationship with customers. CRM is accepted and practiced as the most effective tool of marketing to retain customers. The study on Customer Relationship Management practices in the retail sector is of great significance for a developing country like India. An evolving and potential retail sector is needed for economic development as it provides long term funds for infrastructure development and at the same time strengthens the risk taking ability. The development of the retail sector much depends upon its penetration into the uninsured population segment, which is nearly 80% of the total population. Within this competitive environment in retail sector, to survive, each Retail company needs to find competitive advantage. The present study finds out the customer relationship management its implementation and ronsumer feelings while shopping in More Super Market. The study shows that most of the customers know about the More from advertisement. Most of the customers select More for shopping because of attractive offers.

KEYWORDS:

Customer relationship management, Frequency of purchasing, delighters, customer, sales promotion, strategy, buying factors, advertisements, service encounter, household products, etc.

INTRODUCTION

In India, retail sector has a significant role in creating direct interaction with customers in the competitive world through proper maintains of products, product display, accessibility and assortment. Retailers can no longer view customer service as an option and providing a positive retail customer relationship is vital. A coherent and successful retail service model is the differentiating factor between a successful and unsuccessful business.

Based upon research conducted by Customer Champions, on behalf of Skill smart Retail, and utilizing interviews with a range of retailers such as Waitrose and Marks & Spencer through to outstanding independent retailers, this article begins to cover some of the findings when it comes to retail customer service. Customer service is a vitally important differentiator across the retail industry. Regardless of whether the customer proposition is higher value or basic/simple, the challenge is to develop a retail service model that treats each

[Suvarchala et. al., Vol.6 (Iss.7): July 2018]
(Received: June 07, 2018 - Accepted: July 26, 2018)
ISSN- 2350-0530(O), ISSN- 2394-3629(P)
DOI: 10.29121/granthaalayah.v6.i7.2018.1295

INTERNATIONAL JOURNAL OF RESEARCH – GRANTHAALAYAH
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Management

CUSTOMER EXPERIENCE MANAGEMENT IN BANKING SECTOR - A BRIEF REVIEW

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Abstract

The competition among the organizations in financial services sector is continuously increasing. Banking industry is a backbone of nation's economy and it is one of the largest industries in India in terms of revenue and employment. The banking structure played a major role in the mobilisation of savings and promoting economic development. The intensity of customer-organisation relationship has changed dramatically over time. Customer experience is the product of an interaction between an organisation and a customer over the duration of their relationship. The key elements like strategy, culture, processes and systems etc. impact the CEM in banks. The antecedents like customer knowledge management, satisfaction, trust and loyalty influence the CEM in organizations. This paper is an attempt to trace out the elements of CEM and the various factors leading to the neglect of CEM in banking sector.

Keywords: Antecedents; Retail Banking; Customer Expectations; Social Environment; Service Encounter; Service Offering; Electronic Channels.

Cite This Article: M.B. Suvarchala and Prof.V. Narasimha Rao. (2018). "CUSTOMER EXPERIENCE MANAGEMENT IN BANKING SECTOR- A BRIEF REVIEW." *International Journal of Research - Granthaalayah*, 6(7), 164-178. 10.29121/granthaalayah.v6.i7.2018.1295.

1. Introduction

The financial services industry (of which retail banking forms an integral part) is continuing its dynamic change. Dibb and Meadows (2001:169) argue that the major players in retail banking are becoming increasingly blurred as the effects of mergers, flotations and new market entrants are felt. More than ever before, retail banking managers needs a detailed understanding of their customers, their current and potential profitability, how to meet the needs of their best customers successfully by providing an appropriate range of financial services, and how to prevent these valuable customers from switching to other service providers. All of this must be done while keeping costs down and ensuring that business processes are streamlined and efficient.