

## NEW DRUG INFORMATION

### VANOPRAZAN

**Name of the Content :** Voneprazan 20MG

**Approved Status :** Approved by the U.S. FDA in 2022 for the treatment of certain gastrointestinal conditions, particularly in patients who require acid suppression.

**MOA :** Vonoprazan is a potassium competitive acid blocker (P-CAB) that inhibits gastric acid secretion. It binds to the proton pump in the parietal cells of the stomach, preventing the secretion of hydrochloric acid. This mechanism is distinct from traditional PPIs, which Irreversibly inhibit the proton pump.

**Dosage :** Adults: 20 mg once daily.

**Duration :** Usually prescribed for 8-12 weeks, depending on the condition being treated.

**Dosage for H. pylori Eradication :** Often used in combination with antibiotics, dosages may vary based on the specific regimen.

**Route of Administration-** Oral (Tablet)

**Storage :** Below 30°C

#### Medical Use :

1. Treatment of gastroesophageal reflux disease (GERD)
2. Management of peptic ulcers.
3. Eradication of Helicobacter pylori in combination with antibiotics
4. Treatment of Zollinger-Ellison syndrome

**Side Effects :** Nausea, Diarrhoea, Headache, Abdominal pain

**Safety Advice :** Pregnancy and Breastfeeding: Consult a healthcare provider before use.

**Long-Term Use :** Long-term use of vonoprazan may increase the risk of certain gastrointestinal infections or deficiencies (e.g., vitamin B12). Regular monitoring may be necessary.



Khatoon Education Society's

**ROYAL COLLEGE OF PHARMACEUTICAL  
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# ROYAL PHARMA BULLETIN

The unique communique.....

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Khatoon Minority Women's Social Welfare and Education Society's  
**ROYAL COLLEGE OF PHARMACEUTICAL EDUCATION & RESEARCH**

### Founder's Message :

Our Society has already enlisted its name by expanding a network of pre-primary, primary & high schools, junior college of Arts & Science, Colleges of Education (D. T. Ed. (Marathi & Urdu), B. Ed. and M. Ed.) besides several non formal social and welfare institutions. Now for meeting the dire need of time, when world over scientist are engaged in development of medicine for cure of several life threatening diseases and accordingly fight the complexities of life and health care have grown out of portion in recent past, then at this juncture Royal College of Pharmaceutical Education and Research is spontaneously serving the exact need of the Nation and this panacea is flourishing in all respects.



● Founder ●  
Late Abdul Muttalib Sir

### Chairman's Message :

As everyone know that Business, profession, education in fact progression everything changing rapidly globally. We need to have right position at right time otherwise we will be left behind. Hence there is need to impart high quality education supplemented with latest infrastructure and pool of resources.

This is what our college is focus on and we know that by placing the right people on right job we can make it big success.



● Chairman ●  
Mr. Shaikh Rizwan Ah.

### College Vision

To Impart and Inculcate quality education in the field of pharmaceutical education and research in order to produce high caliber promising pharmacist in complex global business environment by creating the spirit of innovation and achievement for the growth of nation and world.

### College Mission

To nurture budding Pharmacist by Providing and developing better Pharmacy education, Training and research skills to benefit not only the society but also the whole nation and human being.



## Structure-Based Drug Design of PPAR gamma Agonists for Anti-cancer Activity

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### ABSTRACT :

PPAR  $\gamma$  (Peroxisome proliferator Activated Receptors gamma) has physiological response in body upon its activation through different agonists which can be fruitful for management of cancer. Using Molecular docking we designed suitable agonists which could be the possible pharmacophores for PPAR  $\gamma$  activation. Some ester derivatives of rhodanine are designed using Structural Activity Relationship Studies by V Life MDS Software package version 4.2 and synthesized by *Schotten Bauman's Esterification* reaction. In current work we synthesized five derivatives and are characterized by spectroscopic techniques that validate the correct synthesis of the compounds. Further evaluated their effect on MCF7 cell lines for Anticancer Potential

**KEY WORDS:** PPAR  $\gamma$ , Molecular Docking, Rhodanine, Schotten Bauman's esterification, pharmacophore

### CONCLUSION :

- All the selected compounds show proper binding with the similar residues on PPAR gamma receptors and having best fit with the target.
- As these bind properly with the pharmacophoric points hence they can be possible leads for PPAR  $\gamma$  agonism
- After spectral characterization it is evident that synthesized molecules are showing maximum correlation with the mass spectrometry as the data practically obtained is pretty close to the theoretically calculated molecular weights of the compounds.
- In future we will screen the synthesized compounds for cytotoxicity assay to see whether they are suitable for cancer therapy or not.
- As shown in Table 2 the designed Compounds show cell inhibition particularly Compound 2 and Compound 4 are showing IC<sub>50</sub> value less than 100  $\mu$ M concentration which indicate that these two compounds could find their way as Anti-cancer Molecules.

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### Recent Advancements in Pharmaceutical Sciences

- **AI in Drug Discovery:** Artificial intelligence is revolutionizing drug development by predicting molecular interactions, reducing research time, and optimizing formulations. Companies like Google DeepMind and Insilico Medicine have made significant breakthroughs.
- **mRNA Technology Beyond COVID-19:** Researchers are exploring the use of mRNA technology for cancer treatment, personalized medicine, and vaccines for infectious diseases like RSV and Zika virus.

### Regulatory Updates

- **New ICH Guidelines (M13A):** The International Council for Harmonisation (ICH) has introduced new bioequivalence guidelines to ensure consistent drug efficacy and safety.
- **US FDA Approvals:** Several novel drugs received FDA approval, including:
  - **Donanemab** (Eli Lilly) for Alzheimer's disease
  - **Mirikizumab** (Eli Lilly) for ulcerative colitis
  - **Bamlanivimab** (COVID-19 monoclonal antibody therapy)

### Emerging Pharmaceutical Technologies

- **3D Printing of Medicines:** This technology is gaining traction for personalized drug formulations, allowing precise dosage customization for patients with rare conditions.
- **Wearable Drug Delivery Systems:** Devices like smart patches are being developed to provide controlled drug release, improving patient compliance in chronic disease management.

### Global Pharma Market Trends

- **India's Pharmaceutical Export Growth:** India's pharma exports grew by **10% in 2024**, with increased demand for generic drugs, biosimilars, and vaccines.
- **Pharma Mergers & Acquisitions:** Companies like Pfizer and Seagen, and Novo Nordisk and Catalent, are expanding their biologics and gene therapy portfolios.

## ACTIVITIES



### BLOOD DONATION CAMP ON INTERNATIONAL YOUTH DAY

On the occasion of *International Youth Day* on 12th August 2024, the NSS Unit of the Royal College of Pharmaceutical Education and Research organized a one-day Blood Donation Camp in collaboration with Ansar Blood Bank, Malegaon. The event commenced at 10:30 a.m. in the college seminar hall with insightful speeches by Mrs. Heena Shaikh and Dr. A. R. Bakshi. The camp witnessed an enthusiastic response, with 52 participants stepping forward to donate blood, embodying the spirit of youth-driven service and commitment to society.