



# UNLOCKING THE TREATMENT FOR MILD TO MODERATE COVID-19 IN INDIA



Glenmark Pharmaceuticals  
Limited

June 2020

# Glenmark Pharmaceuticals – An Overview

Leading Integrated research-led global pharmaceutical company

Consolidated revenue: INR 9,865 Crores<sup>1</sup>



Among the Top 80 Pharma companies globally<sup>2</sup>



Integrated across the pharmaceutical value chain with strong presence in drug discovery, API and finished dose formulations



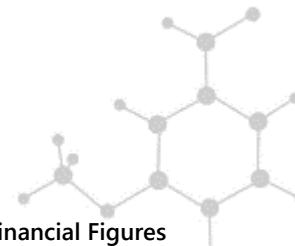
Established research prowess in both novel small molecule and biologics research with molecules in different stages of development



15 facilities across formulations and API in 4 continents



Global Operations in more than 80 countries with over 14000 employees



1. FY 1819 Financial Figures  
2. As per SCRIIP 100 Rankings 2019

# Glenmark Pharmaceuticals – India Business



Among the fastest growing companies for the last 5 years\*



₹2,788 Cr Sales

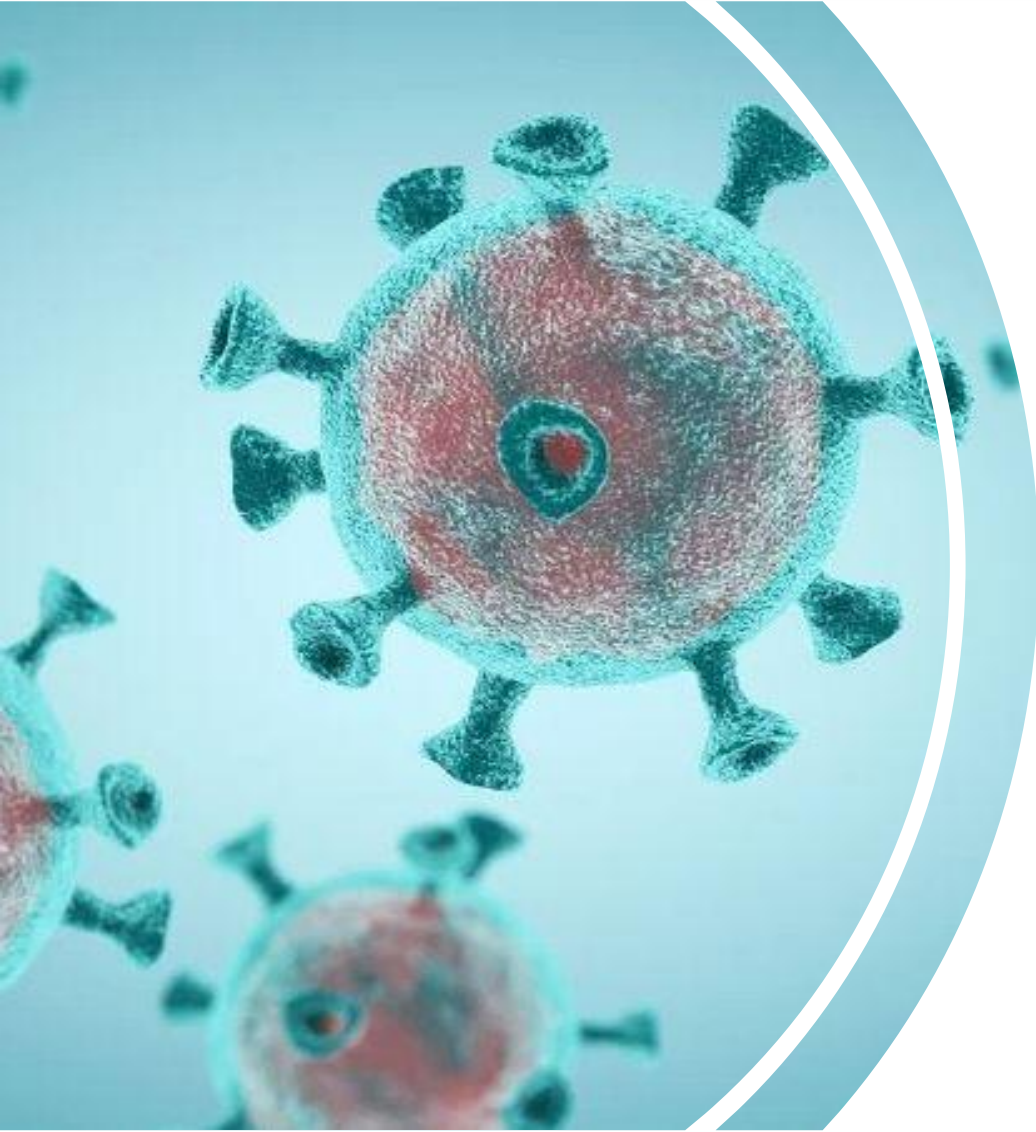


14<sup>th</sup> Rank (Value-wise)

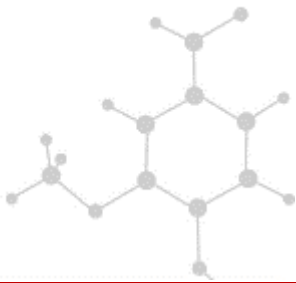


Leadership positions in Dermatology, Respiratory & Anti-Hypertensive therapies

\*In Top 20 companies in Indian Pharmaceutical Market



# COVID 19 – Situation Today



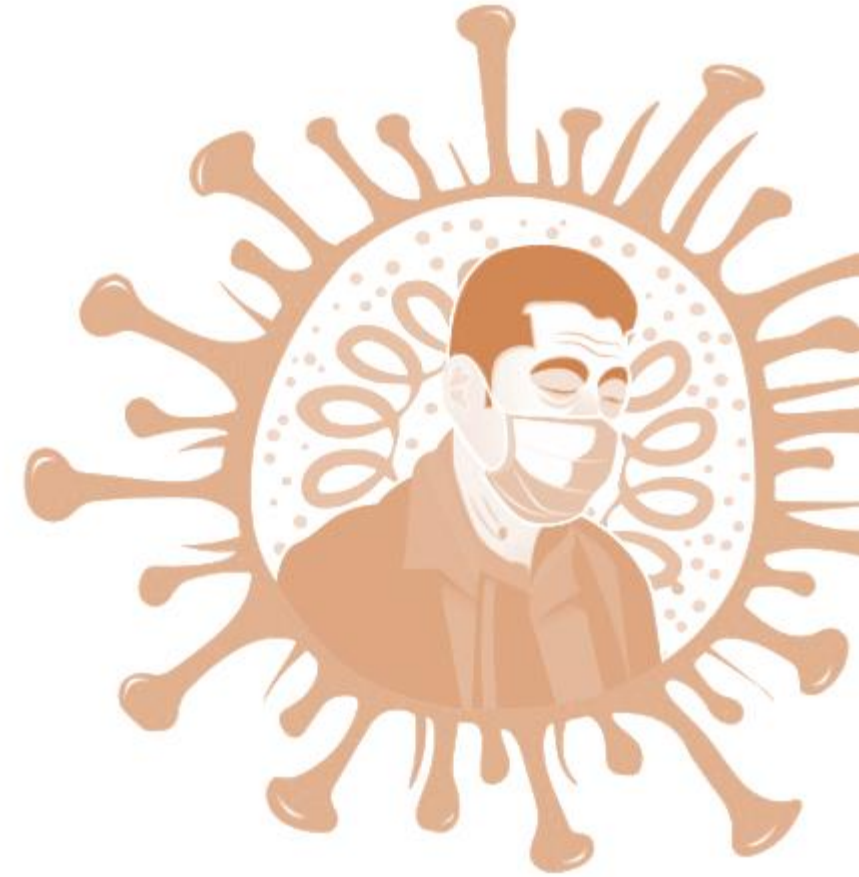
# COVID19 – Global Situation

**83,85,440**  
Confirmed Cases

**216**  
Affected Countries\*

**4,50,686**  
Deaths

**5.37%**  
Fatality Rate



\*Countries/Regions as recognized by WHO

# COVID 19 – Current Situation in India

**3,95,048**

Confirmed Cases

**1,68,269**

Active Cases

**2,13,831**

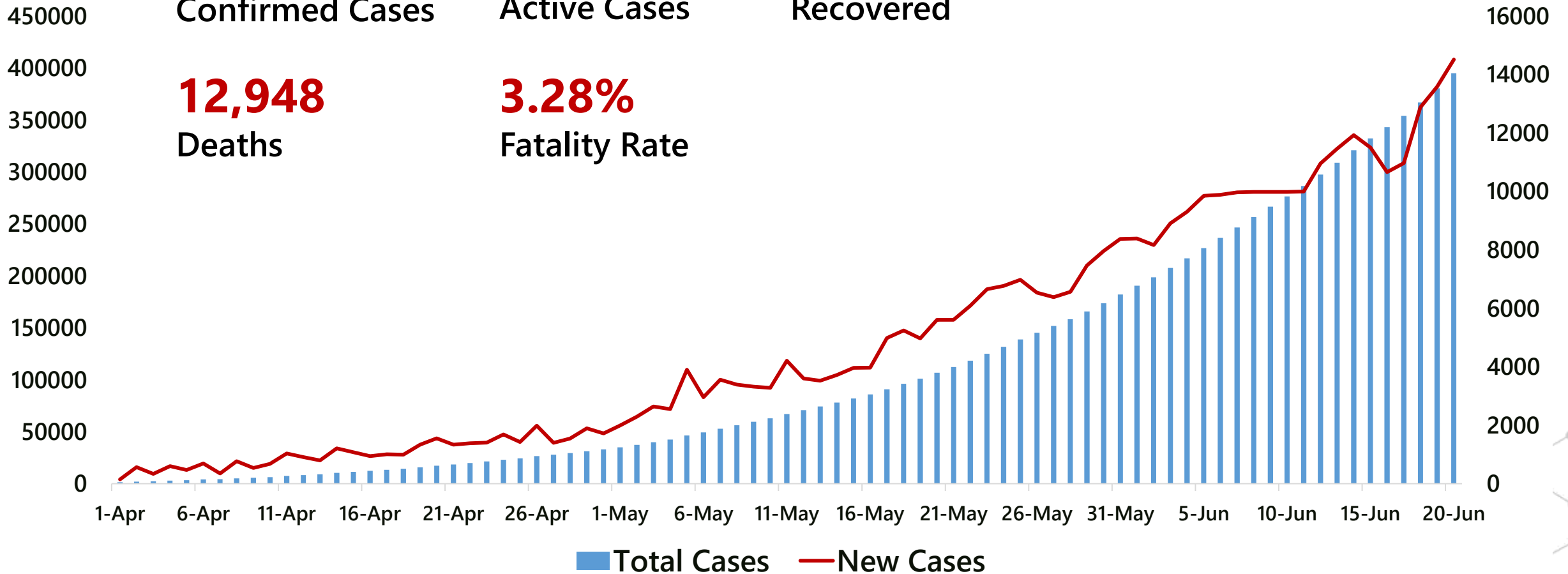
Recovered

**12,948**

Deaths

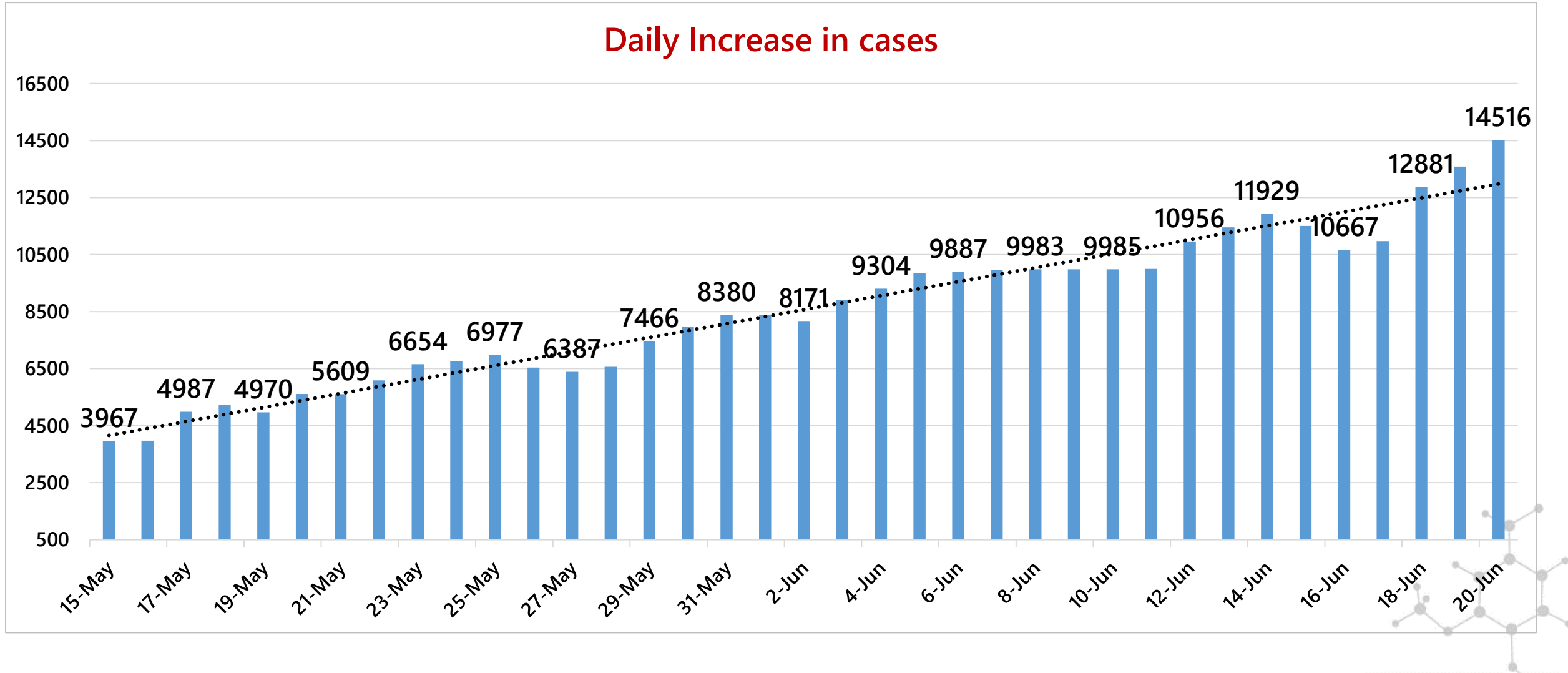
**3.28%**

Fatality Rate

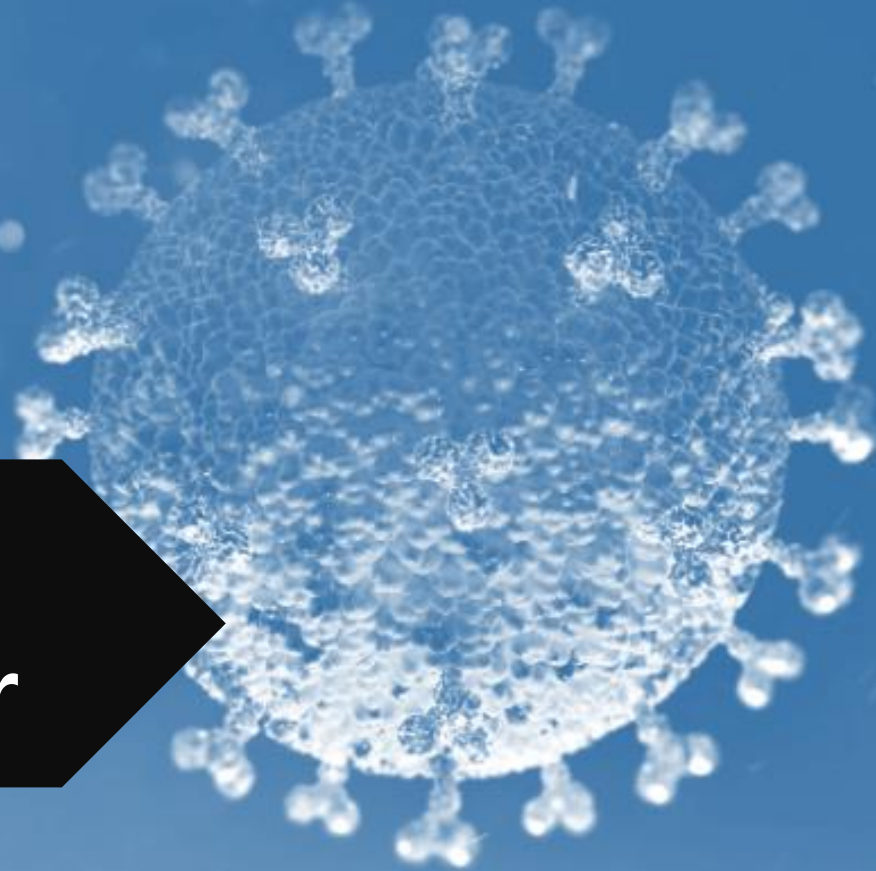


# COVID 19 – Current Situation in India

## Daily Increase in cases







**COVID-19**

Need of the hour



# Need of the hour...

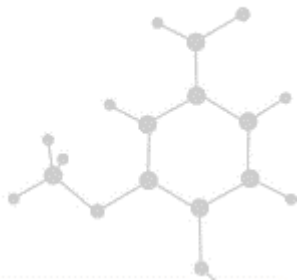
1. Help the healthcare professionals to fight back
2. Help in faster recovery of patients & save lives



**glenmark**

A new way for a new world

is at the forefront of  
**Leading the fight against  
COVID19**



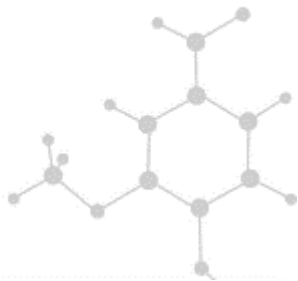


Initiated evaluation of treatment options for  
**COVID-19**

and identified

**Favipiravir**

as a potential candidate.



# Why did we initiate work on Favipiravir?

1 It has a proven in-vitro activity against SARS CoV2<sup>1</sup>



2 It has a wide therapeutic safety margin for COVID-19 dose<sup>2</sup>



3 It had shown promising results in a couple of studies in China<sup>3,4</sup>



4 It is an oral product & that is a big benefit especially when the hospital infrastructure is under strain



5 It already was approved for novel or re-emerging pandemic influenza virus infection in Japan<sup>5</sup>



1,2. Cell Research (2020) 0:1–3; <https://doi.org/10.1038/s41422-020-0282-0>

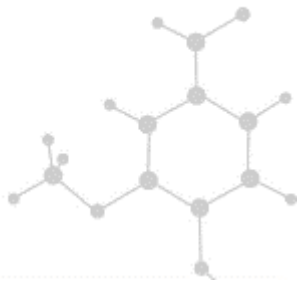
3. Cai Q et al. Engineering (Beijing). 2020;10.1016/j.eng.2020.03.007.

4. Chen C et al. MedRxiv. 2020 Jan 1.

5. Avigan® Tablet 200 mg- Deliberation Results by PMDA. (2014). Favipiravir: Report on the Deliberation Results; Evaluation and Licensing Division, Pharmaceutical and Food Safety Bureau; Ministry of Health, Labour and Welfare; March 4, 2014. Avigan® is registered brand name of the innovator.

# Favipiravir – Global status update

- COVID-19 therapeutic management guidelines include Favipiravir in **Russia, Japan & Saudi Arabia**
- ~18 global CTs in 3000+ subjects in clinical trials globally including **India, USA, Canada, Italy, China, France, UK and other countries**
- **Compassionate Use in Japan:** ~2050 patients already administered Favipiravir in Japan for clinical use – high recovery rates observed at both 7 and 14 days of therapy in both mild and moderate patients
- Approved by **Italy & China** for experimental use/compassionate use in COVID-19
- **760 patient trial of Favipiravir initiated in Canada** recently in long term care centres





# Favipiravir – Global status update

- Under regulatory licensing process in **Turkey**, expected to be made available to patients soon
- Commercially launched by many companies in **Bangladesh**
- Commercialization approval granted in **UAE**; protocol approved in **Jordan**
- Under registration approval process by more than 15 companies for launch in **Egypt**.
- **Indonesia and Thailand** approved clinical protocol; companies developing locally for launch
- Adopted in the COVID-19 treatment protocol in multiple CIS countries such as **Ukraine, Kazakhstan, Uzbekistan and Moldova**
- Evaluation ongoing in other middle eastern countries such as **Iraq and Bahrain** based on **Saudi Arabia COVID-19 treatment guidelines**





# Glenmark demonstrated end-to-end development capabilities...

- Make In India -



1

Synthesized the  
Active Pharmaceutical  
Ingredient (API)

2

Developed the  
Formulation

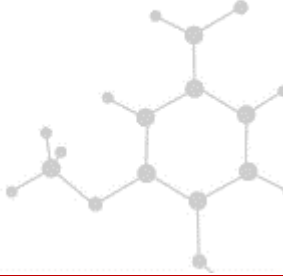
3

Received approval to  
conduct **Clinical Trials**  
in India



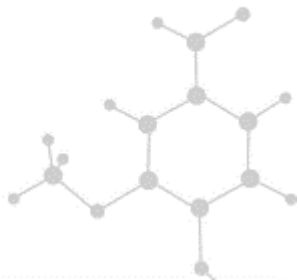


# The Approval Journey



# Glenmark Favipiravir Clinical Trial – An Overview

- Randomized, multi-centric study in Indian patients evaluating efficacy and safety of Favipiravir with standard of care vs. standard of care alone in mild to moderate COVID-19
- **Sample size:** 150 subjects (90 mild and 60 moderate patients)
- **Dosing regimen:** Favipiravir tablets; 3,600 mg (1,800 mg BID) (Day 1) + 1,600 mg (800 mg BID) (Day 2 or later) for up to maximum of 14 days, along with supportive care.
- **Treatment duration:** Maximum of 14 days
- **Patient population:** Hospitalized subjects with confirmed RT-PCR positivity
- Conducted in 11 sites across India.

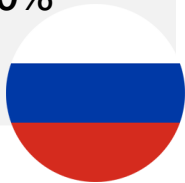


# Promising global evidence of safety & efficacy

## Russian Study basis which approved by Russian Ministry of Health

- No. of patients: 390 (Part 1- 60 and Final part 360)
- Median elimination time for the SARS CoV-2 was 4 days with Favipiravir compared to 9 days with standard therapy.
- With Favipiravir, Day 4 of treatment 65% of patients turned RT-PCR negative for SARS CoV-2, Day 10 of treatment, 90% of patients turned RT-PCR negative for SARS CoV-2
- Favipiravir gr. 68% reached Fever resolution on day 3 vs Std. therapy on day 6
- Overall reported efficacy of favipiravir is >80%

(Ref: [https://rdif.ru/Eng\\_fullNews/5224/](https://rdif.ru/Eng_fullNews/5224/))



## Observational Study from Japan

- No. of patients: 2141

In Mild to Moderate COVID-19 patients-

- Clinical improvement with Favipiravir upto 74% by Day 7 of treatment
- Clinical improvement with Favipiravir upto 88% by Day 14 of treatment

(Ref: [http://www.kansensho.or.jp/uploads/files/topics/2019ncov/covid19\\_casereport\\_en\\_200529.pdf](http://www.kansensho.or.jp/uploads/files/topics/2019ncov/covid19_casereport_en_200529.pdf))



# Promising global evidence of safety & efficacy

## Chinese Study 1 (Cai et al.)

- No. of patients: 80
- Significantly shorter viral clearance time with Favipiravir (4 days) compared to 11 days for LPV/RTV (Lopinavir/Ritonavir)
- Significantly higher improvement in chest CT changes with Favipiravir (91.4%) compared to LPV/RTV(62.2 %)
- Favipiravir has better Safety profile than LPV/RTV

(Ref: Cai Q et al. Engineering (Beijing), 2020;10.1016/j.eng.2020.03.007.)



## Chinese Study 2 (Chen et al.)

- No. of patients: 236
- Significantly superior clinical recovery rate (71.4%) at day 7 with favipiravir than that of umifenovir (55.8%) in moderate COVID-19 patients
- Favipiravir had significantly shorter time to relief from fever and cough than umifenovir

(Ref: Chen C et al. MedRxiv. 2020 Jan 1.)



# All these studies point to the following...



Rapid reduction in viral load<sup>1,2</sup>



Faster fever resolution<sup>1,3</sup>



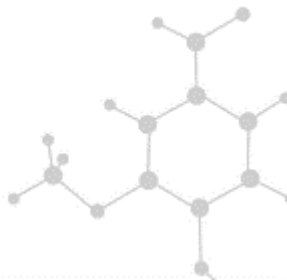
Faster resolution of Chest CT changes<sup>4</sup>



Faster clinical recovery<sup>2,3</sup>

## References:

1. [https://rdif.ru/Eng\\_fullNews/5224/](https://rdif.ru/Eng_fullNews/5224/)
2. [http://www.kansensho.or.jp/uploads/files/topics/2019ncov/covid19\\_casereport\\_en\\_200529.pdf](http://www.kansensho.or.jp/uploads/files/topics/2019ncov/covid19_casereport_en_200529.pdf)
3. Chen C et al. MedRxiv. 2020 Jan 1
4. Cai Q et al. Engineering (Beijing), 2020;10.1016/j.eng.2020.03.007







has received permission from the  
Indian drug regulator

**To Manufacture and Market  
Favipiravir in India for treatment of  
Mild to Moderate COVID-19\***



\*Under the Accelerated Approval Process

# Favipiravir – Accelerated Approval Process

- Accelerated approval process takes into account the disease severity, rarity, and the availability or lack of alternative treatment.
- Glenmark has received approval to manufacture and market Favipiravir in India for mild to moderate COVID-19 cases.
- Emergency Use Authorization is a provision that allows countries to use drugs urgently needed in an emergency situation or healthcare crisis. (COVID-19 pandemic)
- “Emergency” here does not refer to patients in an emergency status of the disease, but refers to the emergency pandemic situation prevalent in the country and the need for effective and timely treatment.
- Restricted use entails “responsible medication” use where every patient must have signed informed consent before treatment initiation





# Favipiravir

An important step for

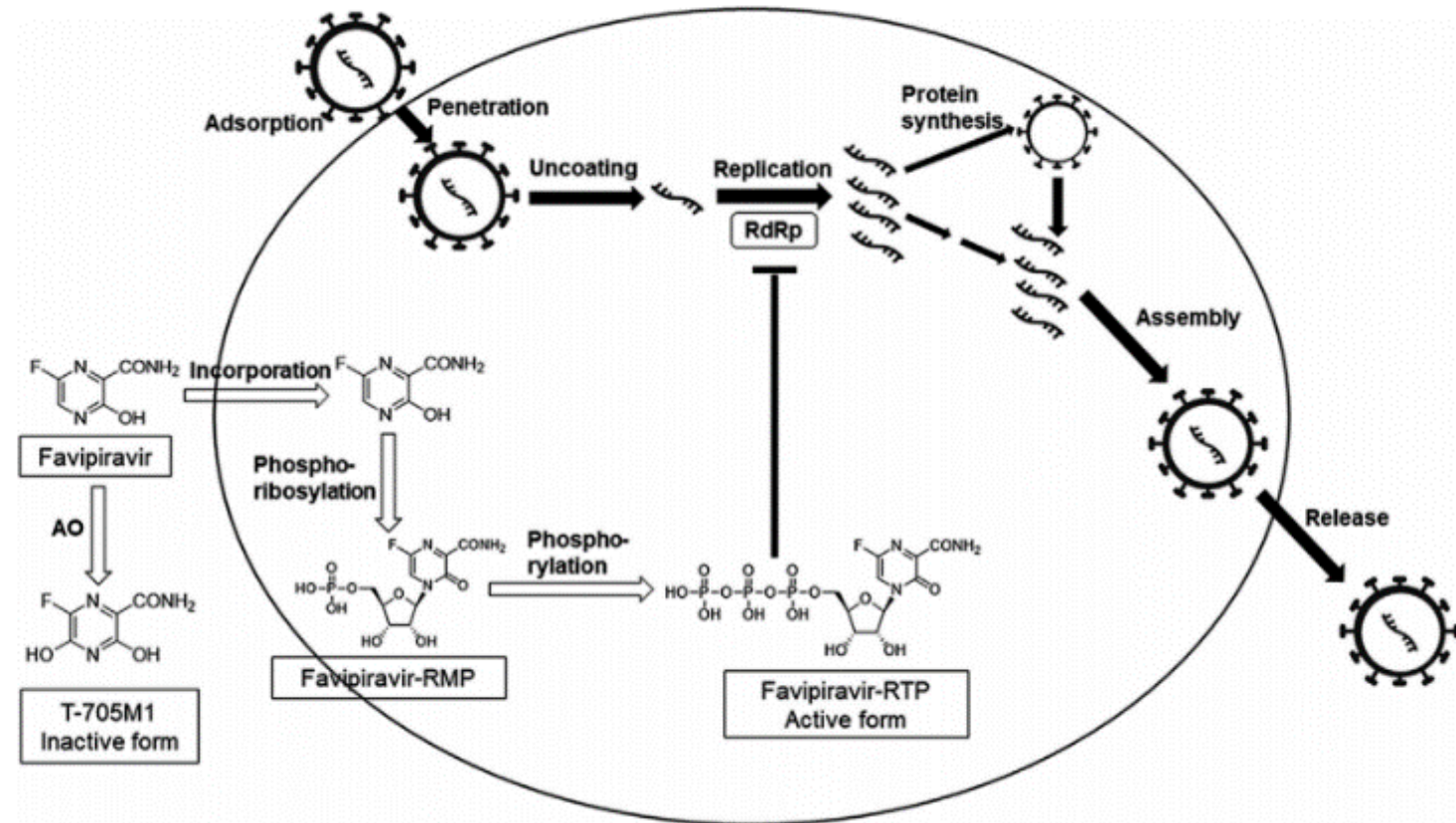
**Oral Treatment of  
Mild to Moderate COVID-19\***

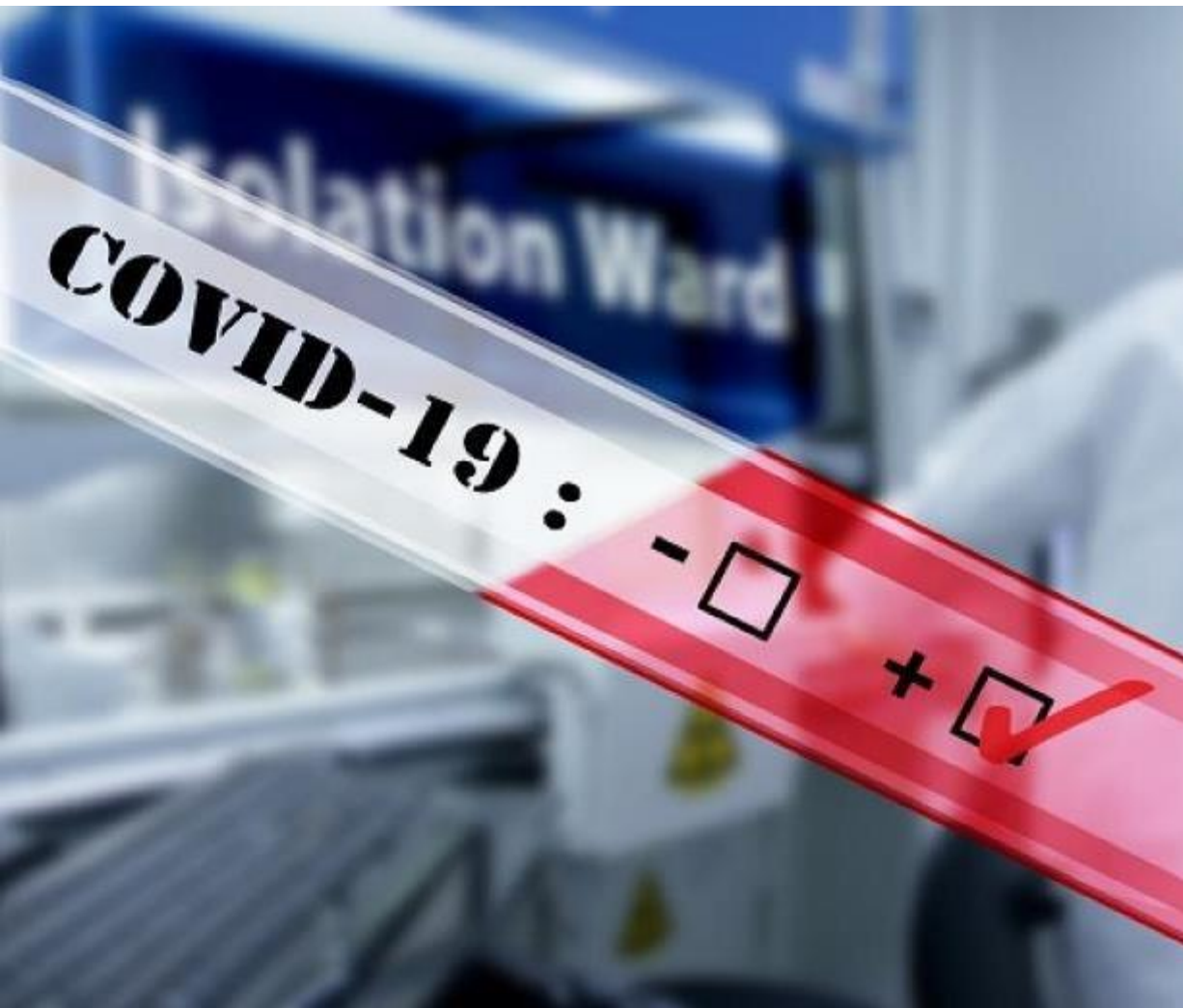


\*Under the Accelerated Approval Process

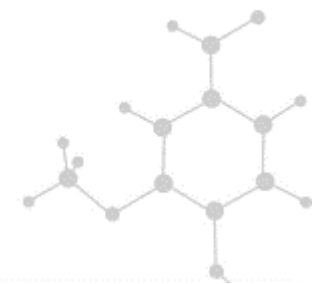
# Favipiravir – Mechanism of Action

- Favipiravir is incorporated into cells and converted to favipiravir ribofuranosyl-5'-triphosphate (favipiravir-RTP) by host cells.
- Favipiravir-RTP, inhibits the activity of RNA dependent RNA polymerase (RdRp) of SARS CoV2.
- The inhibition of RdRp leads to inhibition of the viral replication.



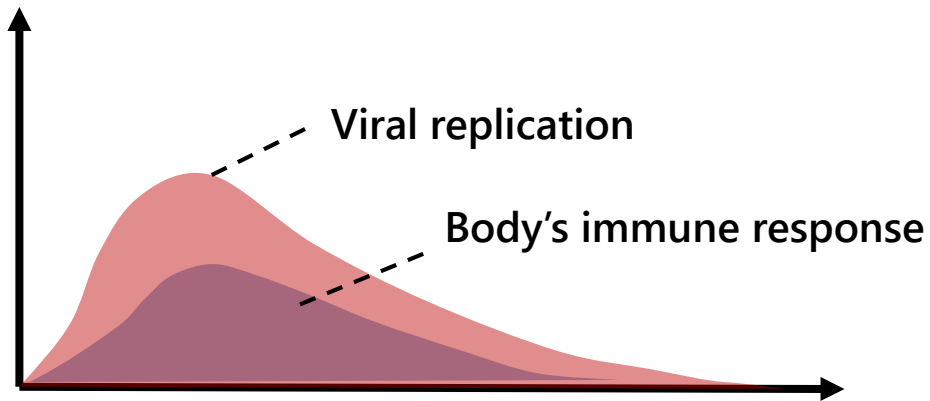


**Starting early is the key...**



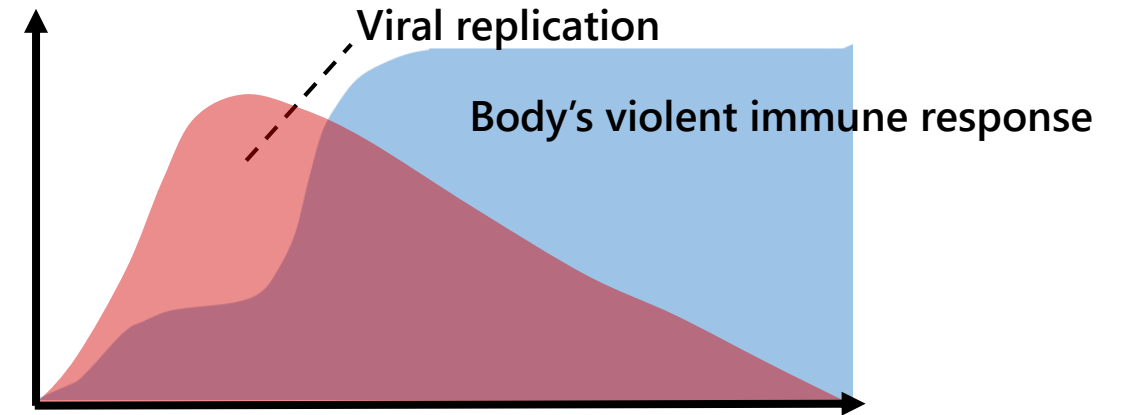
# Favipiravir – Starting early is a key in COV

## Early stages – Mild and Moderate

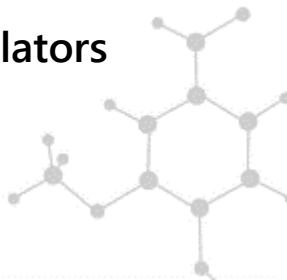


- High rate of viral replication
- Can be controlled with early use of Antiviral drugs
- Limited immune response mediated damage - Immune response subsides quickly

## Later stages- Severe and Critical



- Viral replication slows down
- Body's violent immune response drives disease leading to complications and organ failure
- Diminishing effects of Antiviral drugs
- Higher dependence on other drugs and ventilators for survival





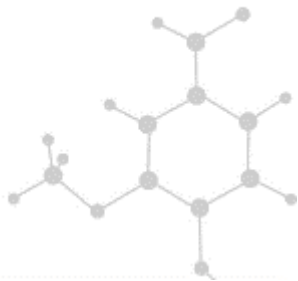
# Favipiravir – Contraindications & Cautions

## Contraindications:

- The drug is contraindicated in patients with severe renal, hepatic impairment, pregnant & lactating women.
- The drug is contraindicated in patients with history of hypersensitivity to Favipiravir.

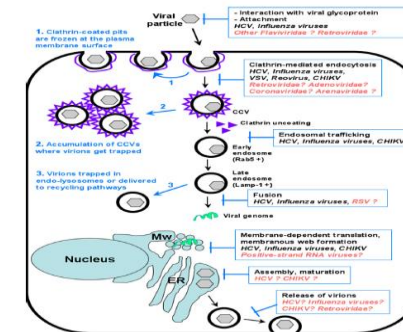
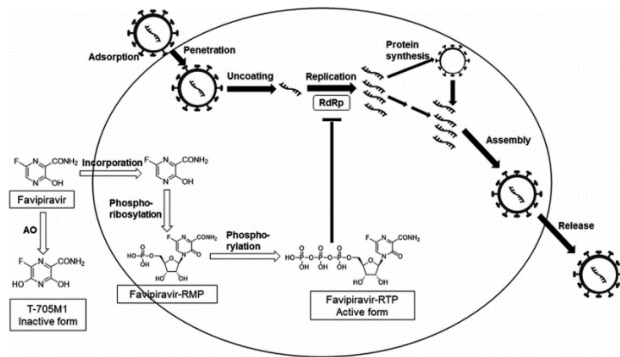
## Cautions:

- The drug should be used with caution in patient with history of abnormalities in metabolism of uric acid or having Gout.



# Favipiravir and Umifenovir Combination – An update

- COVID-19 patients show high viral load at time of symptom onset suggests treating with combination of antiviral drugs- highly effective and minimize the emergence of resistance.
- In line with this strategy, Glenmark proposes to combine two anti-viral drugs **Favipiravir** (Approved drug for novel flu pandemics) with **Umifenovir** (Approved drug for Influenza) – safety well established.
- Both drugs acting on different mechanisms the combined use of **Favipiravir** and **Umifenovir** offers a comprehensive antiviral cover on pre-entry and post-entry life-cycle of SARS-CoV-2 virus.

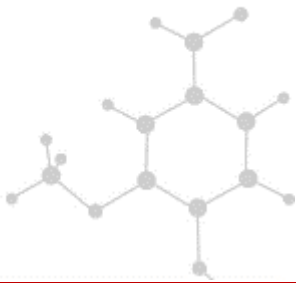


- **Favipiravir:** Prevention of viral replication by inhibition of RNA dependent RNA polymerase

- **Umifenovir:** Interaction with viral attachment, fusion with infected cell



## The Next Step...





**glenmark**

A new way for a new world

proudly introduces



**Fabi**flu®  
Favipiravir 200 mg Tablets

**The First Oral Anti-viral Treatment Option  
for Mild to Moderate COVID-19 cases\***



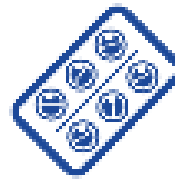
\*Under the Accelerated Approval Process



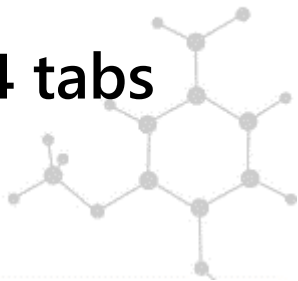
**Fabi**flu®  
Favipiravir 200 mg Tablets



Available as a tablet of 200mg



It will be available in a strip of 34 tabs







**Fabi**flu®  
Favipiravir 200 mg Tablets



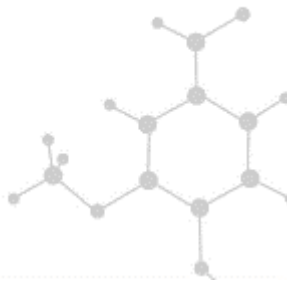
### Dosage:

	Day 1	Day 2 to max 14 days
Total Daily Dose	1800 mg BID	800 mg BID
Morning	200 mg x 9 tabs	200 mg x 4 tabs each day
Evening	200 mg x 9 tabs	200 mg x 4 tabs each day



### Price:

MRP ₹3500 for a pack of 34 tablets  
(Approx. ₹ 103 per tablet)





**Fabi**flu<sup>®\*</sup>  
Favipiravir 200 mg Tablets

A significant step  
in the fight against  
**Mild to Moderate  
COVID-19 cases\***



\*Under the Accelerated Approval Process

# Fabi<sup>®</sup>flu

Favipiravir 200 mg Tablets



Thank you!



**glenmark**

A new way for a new world