



Favipiravir- Important Drug Against COVID-19

Department Of Pharmacology



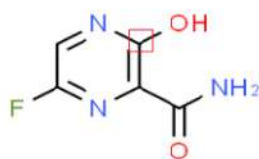
Introduction

Favipiravir is a pyrazine carboxamide derivative and a broad-spectrum antiviral drug approved in Japan for the treatment of influenza. It was discovered through screening chemical library for anti-viral activity against the influenza virus by Toyama Chemical Co., Ltd.

During the 2014–2015 Ebola virus outbreak initiated in West Africa, a proof-of-concept trial with favipiravir was carried out, and patients treated with favipiravir showed improved survival.

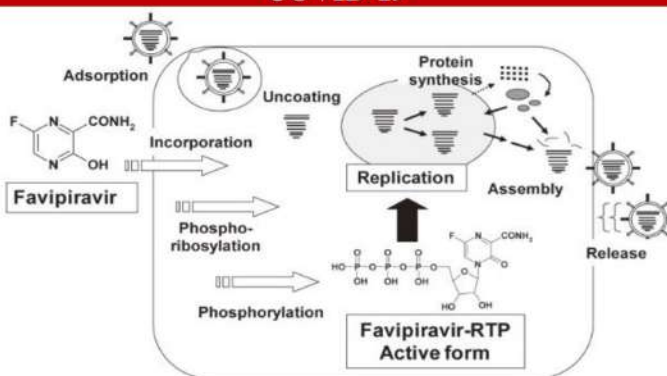
Structure And Its SAR

Modified 2'-C-methyl-NTP analogs causes immediate chain termination. Smaller compounds with pyrazine ring are docked deeper but relatively smaller pocket of VP35.



□ 2'-C-methyl-NTP analogs

Mechanism of Action Alone of Its And Against COVID-19



Favipiravir is a prodrug that is metabolized to its active form i.e favipiravir ribofuranosyl phosphates which selectively inhibits viral RNA-dependent RNA polymerase(RdRp) an enzyme that helps viral replication.

COVID-19 is a RNA virus. When the virus enters in a human cell it will replicate with the help of RdRp enzyme. Favipiravir will inhibit the RdRp enzyme and stop viral replication.

New Hope For COVID-19

Favipiravir provides a substitute for compassionate use in COVID-19 based on its mechanism of action inhibiting virus RdRp. Initial results suggested the drug could help shorten recovery time for patients hence may be helpful

Clinical Trials

A clinical trial was conducted in China, which involves 80 patients. The trial showed that the medicine can shorten the recovery time from 11 days to 4 days for mild and regular cases.

Ref: Favipiravir 'very effective' against COVID-19, clinical trials show 18 March 2020.

Fujifilm is doing phase 3 clinical trials in Japan.

What Does FDA Says?

It is FDA approved drug for the treatment of influenza. The US Food and Drug Administration had given the green light for the clinical trial that could be used to treat the corona virus

Ref: US trial of Japanese flu drug for coronavirus gets green light 7 April 2020

Dosage Regime

It is administered orally of 3,200 mg (1,600 mg twice daily) dose on day 1 followed by 1,200 mg dose (600 mg twice daily) on day 2 to day 14 is found to be effective

Side Effects & Drug drug interaction

The main adverse reactions include mild to moderate diarrhea.

Co-administration of the drug with AO inhibitors such as cimetidine, tamoxifen, verapamil, amlodiipine, could theoretically raise blood levels of active AVI metabolites

Facts of Covid 19 treatment in India

Glenmark has got the approval to conduct clinical trials having successfully developed the API.

Stride Pharma has developed Favipiravir tablets and is awaiting government approval to start trials.