

# **Ribavirin (Copegus®, Rebetol®, Ribasphere®, Virazole®)**

## **Class:**

Ribavirin is a nucleoside analogue.

## **Antiviral Activity:**

Ribavirin has a broad spectrum of virustatic activity against both DNA and RNA viruses.

## **Mechanism of Action:**

The precise mechanism of action of ribavirin is unknown.

## **Mechanism of Resistance:**

The development of resistance to ribavirin is rare. However, mutations leading to resistance of hepatitis C virus have been reported.

## **Pharmacodynamics:**

Reduction of hepatitis C plasma viral load to undetectable levels by 24 weeks of therapy correlates with sustained virologic response (SVR). Patients who have not attained this benchmark are not likely to achieve SVR (less than 2% will do so) and thus should stop therapy.

## **Pharmacokinetics:**

Ribavirin is well absorbed after oral administration. However, pre-systemic drug elimination limits absolute bioavailability to 33 to 65%. The mean apparent volume of distribution (Vd) ranges from 800 to 2000 liters, indicating extensive tissue distribution. There is no significant plasma protein binding of ribavirin. Ribavirin undergoes reversible phosphorylation and also degradation via deribosylation and amide hydrolysis. The estimated renal clearance is approximately 40% and renal tubular secretion appears to play a role.

## **Adverse Effects:**

The most important adverse effect is anemia from ribavirin-induced hemolysis. This may be accompanied by hyperuricemia and hyperbilirubinemia.

## **Dosage:**

Tablet 200mg

Capsule 200mg

Oral Solution 40mg/ml

Powder for Inhalation Solution 6g

See text for specific dosing

Disease state based dosing:

Renal Impairment:

The manufacturer does not recommend administration to patients with creatinine clearances of less than 50 mL/min.

Hepatic Impairment:  
No specific guidelines are available

**Contraindications/Warnings/ Precautions:**

Ribavirin monotherapy is not effective for the treatment of hepatitis C and should be combined with interferon alfa-2b.

**Drug Interactions:**

Ribavirin is not a substrate and does not affect the CYP450 enzyme system.

**Pregnancy:**

Category X: Drug contraindicated.

**Monitoring Requirements:**

CBC with differential, hemoglobin/hematocrit, LFTs, pregnancy testing, thyroid function tests (TFTs)

**Brand names/Manufacturer:**

Copegus®/Hoffmann La Roche Inc

Rebetol®/Schering Corp

Ribasphere®/Par Pharmaceutical Inc, Three Rivers Pharmaceuticals, LLC

Virazole®/Valeant Pharmaceuticals

Ribavirin/Teva Pharmaceuticals USA Inc, Sandoz Pharmaceuticals, Warrick Pharmaceuticals Corp