**HIGHLIGHTS OF PRESCRIBING INFORMATION**

**These highlights do not include all the information needed to use COMPLERA safely and effectively. See full prescribing information for COMPLERA.**

**COMPLERA™ (emtricitabine/rilpivirine/tenofovir disoproxil fumarate) tablets**

**Initial U.S. Approval: 2011**

**WARNINGS: LACTIC ACIDOSIS/SEVERE HEPATOMEGALY WITH STEATOSIS and POST TREATMENT ACUTE EXACERBATION OF HEPATITIS B**

***See full prescribing information for complete boxed warning.***

- **Lactic acidosis and severe hepatomegaly with steatosis, including fatal cases, have been reported with the use of nucleoside analogs, including tenofovir disoproxil fumarate, a component of COMPLERA. (5.1)**
- **COMPLERA is not approved for the treatment of chronic hepatitis B virus (HBV) infection. Severe acute exacerbations of hepatitis B have been reported in patients coinfected with HIV-1 and HBV who have discontinued EMTRIVA or VIREAD, two of the components of COMPLERA. Hepatic function should be monitored closely in these patients. If appropriate, initiation of anti-hepatitis B therapy may be warranted. (5.2)**

**----------INDICATIONS AND USAGE----------**

COMPLERA, a combination of 2 nucleoside analog HIV-1 reverse transcriptase inhibitors (emtricitabine and tenofovir disoproxil fumarate) and 1 non-nucleoside reverse transcriptase inhibitor (rilpivirine), is indicated for use as a complete regimen for the treatment of HIV-1 infection in treatment-naive adults. (1)

The following points should be considered when initiating therapy with COMPLERA:

- More rilpivirine-treated subjects with HIV-1 RNA greater than 100,000 copies/mL at the start of therapy experienced virologic failure compared to subjects with HIV-1 RNA less than 100,000 copies/mL at the start of therapy.
- The observed virologic failure rate in rilpivirine-treated subjects conferred a higher rate of overall treatment resistance and cross-resistance to the NNRTI class compared to efavirenz.
- More subjects treated with rilpivirine developed lamivudine/emtricitabine associated resistance compared to efavirenz. (1, 12.4, 14)
- COMPLERA is not recommended for patients less than 18 years of age. (8.4)

**----------DOSAGE AND ADMINISTRATION----------**

- Recommended dose: One tablet (containing 200 mg of emtricitabine, 25 mg of rilpivirine, and 300 mg of tenofovir disoproxil fumarate) taken once daily with a meal. (2)
- Dose in renal impairment: Should not be administered in patients with creatinine clearance below 50 mL per minute. (2)

**----------DOSAGE FORMS AND STRENGTHS----------**

Tablets: 200 mg of emtricitabine, 25 mg of rilpivirine, and 300 mg of tenofovir disoproxil fumarate. (3)

**----------CONTRAINDICATIONS----------**

Coadministration of COMPLERA is contraindicated with drugs where significant decreases in rilpivirine plasma concentrations may occur, which may result in loss of virologic response and possible resistance and cross-resistance. (4)

**----------WARNINGS AND PRECAUTIONS----------**

- New onset or worsening renal impairment: Can include acute renal failure and Fanconi syndrome. Assess creatinine clearance (CrCl) before initiating treatment with COMPLERA. Monitor CrCl and serum phosphorus in patients at risk. Avoid administering COMPLERA with concurrent or recent use of nephrotoxic drugs. (5.3)
- Caution should be given to prescribing COMPLERA with drugs that may reduce the exposure of rilpivirine. (5.4)
- Caution should be given to prescribing COMPLERA with drugs with a known risk of Torsade de Pointes. (5.4)
- Depressive disorders: Severe depressive disorders (depressed mood, depression, dysphoria, major depression, mood altered, negative thoughts, suicide attempt, suicidal ideation) have been reported. Immediate medical evaluation is recommended for severe depressive disorders. (5.5)
- Decreases in bone mineral density (BMD): Consider monitoring BMD in patients with a history of pathologic fracture or other risk factors of osteoporosis or bone loss. (5.6)
- Coadministration with other products: Do not use with drugs containing emtricitabine, rilpivirine or tenofovir disoproxil fumarate including ATRIPLA, EDURANT, EMTRIVA, TRUVADA, VIREAD, or with drugs containing lamivudine. Do not administer in combination with HEPSERA. (5.7)
- Redistribution/accumulation of body fat: Observed in patients receiving antiretroviral therapy. (5.8)
- Immune reconstitution syndrome: May necessitate further evaluation and treatment. (5.9)

**----------ADVERSE REACTIONS----------**

Most common adverse drug reactions to rilpivirine (incidence greater than or equal to 2%, Grades 2-4) are insomnia and headache. (6.1)

Most common adverse drug reactions to emtricitabine and tenofovir disoproxil fumarate (incidence ≥10%) are diarrhea, nausea, fatigue, headache, dizziness, depression, insomnia, abnormal dreams, and rash. (6.1)

**To report SUSPECTED ADVERSE REACTIONS, contact Gilead Sciences, Inc. at 1-800-GILEAD-5 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch**

**----------DRUG INTERACTIONS----------**

- COMPLERA is a complete regimen for the treatment of HIV-1 infection; therefore, COMPLERA should not be administered with other antiretroviral medications for treatment of HIV-1 infection.
- CYP3A4 inducers or inhibitors: Drugs that induce or inhibit CYP3A4 may affect the plasma concentrations of rilpivirine. (7.1)
- Drugs that increase gastric pH: Drugs that increase gastric pH may decrease plasma concentrations of rilpivirine. (7.2)

**----------USE IN SPECIFIC POPULATIONS----------**

- Pregnancy: Use during pregnancy only if the potential benefit justifies the potential risk. Pregnancy registry available. (8.1)
- Nursing mothers: Women infected with HIV should be instructed not to breastfeed due to the potential for HIV transmission. (8.3)
- Pediatrics: Not recommended for patients less than 18 years of age. (8.4)

**See 17 for PATIENT COUNSELING INFORMATION and FDA-Approved Patient Labeling.**

**Revised: 08/2011**



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## FULL PRESCRIBING INFORMATION

**WARNINGS: LACTIC ACIDOSIS/SEVERE HEPATOMEGALY WITH STEATOSIS and POST TREATMENT ACUTE EXACERBATION OF HEPATITIS B**

**Lactic acidosis and severe hepatomegaly with steatosis, including fatal cases, have been reported with the use of nucleoside analogs, including tenofovir disoproxil fumarate, a component of COMPLERA, in combination with other antiretrovirals *[See Warnings and Precautions (5.1)]*.**

**COMPLERA is not approved for the treatment of chronic hepatitis B virus (HBV) infection and the safety and efficacy of COMPLERA have not been established in patients coinfected with HBV and HIV-1. Severe acute exacerbations of hepatitis B have been reported in patients who are coinfected with HBV and HIV-1 and have discontinued EMTRIVA or VIREAD, which are components of COMPLERA. Hepatic function should be monitored closely with both clinical and laboratory follow-up for at least several months in patients who are coinfected with HIV-1 and HBV and discontinue COMPLERA. If appropriate, initiation of anti-hepatitis B therapy may be warranted *[See Warnings and Precautions (5.2)]*.**

## 1 INDICATIONS AND USAGE

COMPLERA (emtricitabine/rilpivirine/tenofovir disoproxil fumarate) is indicated for use as a complete regimen for the treatment of HIV-1 infection in antiretroviral treatment-naive adults.

This indication is based on Week 48 safety and efficacy analyses from 2 randomized, double-blind, active controlled, Phase 3 trials in treatment-naive subjects comparing rilpivirine to efavirenz *[See Clinical Studies (14)]*.

The following points should be considered when initiating therapy with COMPLERA:

- More rilpivirine-treated subjects with HIV-1 RNA greater than 100,000 copies/mL at the start of therapy experienced virologic failure compared to subjects with HIV-1 RNA less than 100,000 copies/mL at the start of therapy *[See Clinical Studies (14)]*.
- The observed virologic failure rate in rilpivirine-treated subjects conferred a higher rate of overall treatment resistance and cross-resistance to the NNRTI class compared to efavirenz *[See Microbiology (12.4)]*.
- More subjects treated with rilpivirine developed lamivudine/emtricitabine associated resistance compared to efavirenz *[See Microbiology (12.4)]*.

COMPLERA is not recommended for patients less than 18 years of age *[See Use in Specific Populations (8.4)].*



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## 2 DOSAGE AND ADMINISTRATION

*Adults:* The recommended dose of COMPLERA is one tablet taken orally once daily with a meal *[See Clinical Pharmacology (12.3)]*.

*Renal Impairment:* Because COMPLERA is a fixed-dose combination, it should not be prescribed for patients requiring dose adjustment such as those with moderate or severe renal impairment (creatinine clearance below 50 mL per minute).

## 3 DOSAGE FORMS AND STRENGTHS

COMPLERA is available as tablets. Each tablet contains 200 mg of emtricitabine (FTC), 27.5 mg of rilpivirine hydrochloride (equivalent to 25 mg of rilpivirine) and 300 mg of tenofovir disoproxil fumarate (tenofovir DF or TDF, equivalent to 245 mg of tenofovir disoproxil).

The tablets are purplish-pink, capsule-shaped, film-coated, debossed with “GSI” on one side and plain-faced on the other side.

## 4 CONTRAINDICATIONS

COMPLERA should not be coadministered with the following drugs, as significant decreases in rilpivirine plasma concentrations may occur due to CYP3A enzyme induction or gastric pH increase, which may result in loss of virologic response and possible resistance to COMPLERA or to the class of NNRTIs *[See Drug Interactions (7) and Clinical Pharmacology (12.3)]*:

- the anticonvulsants carbamazepine, oxcarbazepine, phenobarbital, phenytoin
- the antimycobacterials rifabutin, rifampin, rifapentine
- proton pump inhibitors, such as esomeprazole, lansoprazole, omeprazole, pantoprazole, rabeprazole
- the glucocorticoid systemic dexamethasone (more than a single dose)
- St. John’s wort (*Hypericum perforatum*)

## 5 WARNINGS AND PRECAUTIONS

### 5.1 Lactic Acidosis/Severe Hepatomegaly with Steatosis

Lactic acidosis and severe hepatomegaly with steatosis, including fatal cases, have been reported with the use of nucleoside analogs, including tenofovir DF, a component of COMPLERA, in combination with other antiretrovirals. A majority of these cases have been in women. Obesity and prolonged nucleoside exposure may be risk factors. Particular caution should be exercised when administering nucleoside analogs to any patient with known risk factors for liver disease; however, cases have also been reported in patients with no known risk factors. Treatment with COMPLERA should be suspended in any patient who develops clinical or laboratory findings suggestive of lactic acidosis or pronounced hepatotoxicity (which may include hepatomegaly and steatosis even in the absence of marked transaminase elevations).



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### 5.2 Patients Coinfected with HIV-1 and HBV

It is recommended that all patients with HIV-1 be tested for the presence of chronic hepatitis B virus before initiating antiretroviral therapy. COMPLERA is not approved for the treatment of chronic HBV infection and the safety and efficacy of COMPLERA have not been established in patients coinfected with HBV and HIV-1. Severe acute exacerbations of hepatitis B have been reported in patients who are coinfected with HBV and HIV-1 and have discontinued emtricitabine or tenofovir DF, two of the components of COMPLERA. In some patients infected with HBV and treated with EMTRIVA, the exacerbations of hepatitis B were associated with liver decompensation and liver failure. Patients who are coinfected with HIV-1 and HBV should be closely monitored with both clinical and laboratory follow-up for at least several months after stopping treatment with COMPLERA. If appropriate, initiation of anti-hepatitis B therapy may be warranted.

### 5.3 New Onset or Worsening Renal Impairment

Renal impairment, including cases of acute renal failure and Fanconi syndrome (renal tubular injury with severe hypophosphatemia), has been reported with the use of tenofovir DF *[See Adverse Reactions (6.2)]*.

It is recommended that creatinine clearance be calculated in all patients prior to initiating therapy and as clinically appropriate during therapy with COMPLERA. Routine monitoring of calculated creatinine clearance and serum phosphorus should be performed in patients at risk for renal impairment, including patients who have previously experienced renal events while receiving HEPSERA.

COMPLERA should be avoided with concurrent or recent use of a nephrotoxic agent.

Emtricitabine and tenofovir are principally eliminated by the kidney; however, rilpivirine is not. Since COMPLERA is a combination product and the dose of the individual components cannot be altered, patients with creatinine clearance below 50 mL per minute should not receive COMPLERA.

### 5.4 Drug Interactions

Caution should be given to prescribing COMPLERA with drugs that may reduce the exposure of rilpivirine *[See Contraindications (4), Drug Interactions (7), and Clinical Pharmacology (12.3)]*.

In healthy subjects, supratherapeutic doses of rilpivirine (75 mg once daily and 300 mg once daily) have been shown to prolong the QTc interval of the electrocardiogram *[See Drug Interactions (7) and Clinical Pharmacology (12.2)]*. COMPLERA should be used with caution when coadministered with a drug with a known risk of Torsade de Pointes.

### 5.5 Depressive Disorders

The adverse reaction depressive disorders (depressed mood, depression, dysphoria, major depression, mood altered, negative thoughts, suicide attempt, suicidal ideation) has been reported with rilpivirine. During the Phase 3 trials (N=1368), the incidence of depressive disorders (regardless of causality, severity) reported among rilpivirine (N=686) or efavirenz (N=682) was 8% and 6%, respectively. Most events were mild or moderate in severity. The incidence of Grade 3 and 4 depressive disorders (regardless



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of causality) was 1% for both rilpivirine and efavirenz. The incidence of discontinuation due to depressive disorders among rilpivirine or efavirenz was 1% in each arm. Suicide attempt was reported in 2 subjects in the rilpivirine arm while suicide ideation was reported in 1 subject in the rilpivirine arm and in 3 subjects in the efavirenz arm. Patients with severe depressive symptoms should seek immediate medical evaluation to assess the possibility that the symptoms are related to COMPLERA, and if so, to determine whether the risks of continued therapy outweigh the benefits.

### 5.6 Decreases in Bone Mineral Density

Bone mineral density (BMD) monitoring should be considered for HIV-1 infected patients who have a history of pathologic bone fracture or other risk factors for osteoporosis or bone loss. Although the effect of supplementation with calcium and Vitamin D was not studied, such supplementation may be beneficial for all patients. If bone abnormalities are suspected then appropriate consultation should be obtained.

*Tenofovir Disoproxil Fumarate:* In a 144 week study of HIV-1 infected treatment-naive adult subjects treated with tenofovir DF (Study 903), decreases in BMD were seen at the lumbar spine and hip in both arms of the study. At Week 144, there was a significantly greater mean percentage decrease from baseline in BMD at the lumbar spine in subjects receiving tenofovir DF + lamivudine + efavirenz (-2.2% ± 3.9) compared with subjects receiving stavudine + lamivudine + efavirenz (-1.0% ± 4.6). Changes in BMD at the hip were similar between the two treatment groups (-2.8% ± 3.5 in the tenofovir DF group vs. -2.4% ± 4.5 in the stavudine group). In both groups, the majority of the reduction in BMD occurred in the first 24–48 weeks of the study and this reduction was sustained through 144 weeks. Twenty-eight percent of tenofovir DF-treated subjects vs. 21% of the comparator subjects lost at least 5% of BMD at the spine or 7% of BMD at the hip. Clinically relevant fractures (excluding fingers and toes) were reported in 4 subjects in the tenofovir DF group and 6 subjects in the comparator group. Tenofovir DF was associated with significant increases in biochemical markers of bone metabolism (serum bone-specific alkaline phosphatase, serum osteocalcin, serum C telopeptide, and urinary N telopeptide), suggesting increased bone turnover. Serum parathyroid hormone levels and 1,25 Vitamin D levels were also higher in subjects receiving tenofovir DF.

The effects of tenofovir DF-associated changes in BMD and biochemical markers on long-term bone health and future fracture risk are unknown. For additional information, please consult the VIREAD prescribing information.

Cases of osteomalacia (associated with proximal renal tubulopathy and which may contribute to fractures) have been reported in association with the use of VIREAD *[See Adverse Reactions (6.2)]*.

### 5.7 Coadministration with Other Products

COMPLERA should not be administered concurrently with other medicinal products containing any of the same active components, emtricitabine, rilpivirine, or tenofovir DF (EMTRIVA, EDURANT, VIREAD, TRUVADA, ATRIPLA), with medicinal products containing lamivudine (EPIVIR, EPIVIR-HBV, EPZICOM, COMBIVIR, TRIZIVIR), or with adefovir dipivoxil (HEPSERA).



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### 5.8 Fat Redistribution

Redistribution/accumulation of body fat including central obesity, dorsocervical fat enlargement (buffalo hump), peripheral wasting, facial wasting, breast enlargement, and "cushingoid appearance" have been observed in patients receiving antiretroviral therapy. The mechanism and long-term consequences of these events are unknown. A causal relationship has not been established.

### 5.9 Immune Reconstitution Syndrome

Immune reconstitution syndrome has been reported in patients treated with combination antiretroviral therapy, including the components of COMPLERA. During the initial phase of combination antiretroviral treatment, patients whose immune system responds may develop an inflammatory response to indolent or residual opportunistic infections [such as *Mycobacterium avium* infection, cytomegalovirus, *Pneumocystis jirovecii* pneumonia (PCP), or tuberculosis], which may necessitate further evaluation and treatment.

## 6 ADVERSE REACTIONS

The following adverse drug reactions are discussed in other sections of the labeling:

- Lactic Acidosis/Severe Hepatomegaly with Steatosis *[See Boxed Warning, Warnings and Precautions (5.1)]*.
- Severe Acute Exacerbations of Hepatitis B *[See Boxed Warning, Warnings and Precautions (5.2)]*.
- New Onset or Worsening Renal Impairment *[See Warnings and Precautions (5.3)]*.
- Depressive Disorders *[See Warnings and Precautions (5.5)].*
- Decreases in Bone Mineral Density *[See Warnings and Precautions (5.6)]*.
- Immune Reconstitution Syndrome *[See Warnings and Precautions (5.9)]*.

### 6.1 Adverse Reactions from Clinical Trials Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice.

*Studies C209 and C215 – Treatment-Emergent Adverse Drug Reactions:* The safety assessment of rilpivirine, used in combination with other antiretroviral drugs, is based on pooled data from 1368 patients in the Phase 3 trials TMC278-C209 (ECHO) and TMC278-C215 (THRIVE) in antiretroviral treatment-naive HIV-1 infected adult patients. A total of 686 patients received rilpivirine in combination with other antiretroviral drugs as background regimen; most (N=550) received emtricitabine + tenofovir DF as background regimen. The number of subjects randomized to the control arm efavirenz was 682, of which 546 received emtricitabine + tenofovir DF as background regimen *[See Clinical Studies (14)]*. The median duration of exposure for subjects in either treatment arm was 56 weeks.

Adverse drug reactions (ADR) observed in patients who received rilpivirine or efavirenz plus emtricitabine + tenofovir DF as background regimen are shown in Table 1. The



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adverse drug reactions observed in this subset of patients were generally consistent with those seen for the overall patient population participating in these studies (refer to the prescribing information for EDURANT).

The proportion of subjects who discontinued treatment with rilpivirine or efavirenz + emtricitabine/tenofovir DF due to ADR, regardless of severity, was 2% and 5%, respectively. The most common ADRs leading to discontinuation were psychiatric disorders: 8 (1.5%) subjects in the rilpivirine + emtricitabine/tenofovir DF arm and 12 (2.2%) subjects in the efavirenz + emtricitabine/tenofovir DF arm. Rash led to discontinuation in 1 (0.2%) subjects in the rilpivirine + emtricitabine/tenofovir DF arm and 10 (1.8%) subjects in the efavirenz + emtricitabine/tenofovir DF arm.

*Common Adverse Drug Reactions*

Clinical ADRs to rilpivirine or efavirenz of at least moderate intensity (≥ Grade 2) reported in at least 2% of adult subjects are shown in Table 1.

**Table 1 Selected Treatment-Emergent Adverse Drug Reactions[a] (Grades 2-4) Reported in ≥2% of Subjects Receiving Rilpivirine or Efavirenz in Combination with Emtricitabine/Tenofovir DF in Studies C209 and C215 (Week 48 analysis)**

| | **Rilpivirine + FTC/TDF** | **Efavirenz + FTC/TDF** |
|---|---|---|
| | **N=550** | **N=546** |
| Gastrointestinal Disorder | | |
| Nausea | 1% | 2% |
| Nervous System Disorders | | |
| Headache | 2% | 2% |
| Dizziness | 1% | 7% |
| Psychiatric Disorders | | |
| Depressive disorders[b] | 1% | 2% |
| Insomnia | 2% | 2% |
| Abnormal dreams | 1% | 3% |
| Skin and Subcutaneous Tissue Disorders | | |
| Rash | 1% | 5% |

a. Frequencies of adverse reactions are based on all treatment-emergent adverse events assessed to be related to study drug.

b. Includes adverse drug reactions reported as depressed mood, depression, dysphoria, major depression, mood altered, negative thoughts, suicide attempt, suicide ideation.

*Rilpivirine:* Treatment-emergent adverse drug reactions of at least moderate intensity (≥ Grade 2) that occurred in less than 2% of subjects treated with rilpivirine plus any of the allowed background regimen (N=686) in clinical studies C209 and C215 include (grouped by Body System): vomiting, diarrhea, abdominal discomfort, abdominal pain, fatigue, cholecystitis, cholelithiasis, decreased appetite, somnolence, sleep disorders, anxiety, glomerulonephritis membranous and glomerulonephritis mesangioproliferative.



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*Emtricitabine and Tenofovir Disoproxil Fumarate:* The following adverse reactions were observed in clinical trials of emtricitabine or tenofovir DF in combination with other antiretroviral agents:

The most common adverse drug reactions occurred in at least 10% of treatment-naive subjects in a phase 3 clinical trial of emtricitabine and tenofovir DF in combination with another antiretroviral agent are diarrhea, nausea, fatigue, headache, dizziness, depression, insomnia, abnormal dreams, and rash. In addition, adverse drug reactions that occurred in at least 5% of treatment-experienced or treatment-naive subjects receiving emtricitabine or tenofovir DF with other antiretroviral agents in clinical trials include abdominal pain, dyspepsia, vomiting, fever, pain, nasopharyngitis, pneumonia, sinusitis, upper respiratory tract infection, arthralgia, back pain, myalgia, paresthesia, peripheral neuropathy (including peripheral neuritis and neuropathy), anxiety, increased cough, and rhinitis.

Skin discoloration has been reported with higher frequency among emtricitabine-treated subjects; it was manifested by hyperpigmentation on the palms and/or soles and was generally mild and asymptomatic. The mechanism and clinical significance are unknown.

*Laboratory Abnormalities:* The percentage of subjects treated with rilpivirine + emtricitabine/tenofovir DF or efavirenz + emtricitabine/tenofovir DF in studies C209 and C215 with selected treatment-emergent laboratory abnormalities (Grade 1 to 4), representing worst grade toxicity are presented in Table 2.



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**Table 2 Selected Laboratory Abnormalities (Grades 1-4) Reported in Subjects Who Received Rilpivirine or Efavirenz in Combination with Emtricitabine/Tenofovir DF in Studies C209 and C215 (Week 48 Analysis)**

| | | Rilpivirine + FTC/TDF | Efavirenz + FTC/TDF |
|---|---|---|---|
| **Laboratory Parameter Abnormality, (%)** | **DAIDS Toxicity Range** | **N=550** | **N=546** |
| ***BIOCHEMISTRY*** | | | |
| Increased Creatinine | | | |
| Grade 1 | ≥1.1-≤1.3 x ULN[a] | 5% | <1% |
| Grade 2 | >1.3-≤1.8 x ULN | <1% | 1% |
| Increased AST | | | |
| Grade 1 | ≥1.25-≤2.5 x ULN | 13% | 16% |
| Grade 2 | >2.5-≤5.0 x ULN | 3% | 7% |
| Grade 3 | >5.0-≤10.0 x ULN | 2% | 2% |
| Grade 4 | >10.0 x ULN | <1% | 1% |
| Increased ALT | | | |
| Grade 1 | ≥1.25-≤2.5 x ULN | 16% | 19% |
| Grade 2 | >2.5-≤5.0 x ULN | 4% | 6% |
| Grade 3 | >5.0-≤10.0 x ULN | 1% | 2% |
| Grade 4 | >10.0 x ULN | 1% | 1% |
| Increased Total Bilirubin | | | |
| Grade 1 | ≥1.1-≤1.5 x ULN | 5% | <1% |
| Grade 2 | >1.5-≤2.5 x ULN | 2% | <1% |
| Grade 3 | >2.5-≤5.0 x ULN | <1% | <1% |
| Increased Total Cholesterol (fasted) | | | |
| Grade 1 | 5.18-6.19 mmol/L<br>200-239 mg/dL | 13% | 29% |
| Grade 2 | 6.20-7.77 mmol/L<br>240-300 mg/dL | 4% | 15% |
| Grade 3 | >7.77 mmol/L<br>>300 mg/dL | <1% | 2% |
| Increased LDL Cholesterol (fasted) | | | |
| Grade 1 | 3.37-4.12 mmol/L<br>130-159 mg/dL | 11% | 25% |
| Grade 2 | 4.13-4.90 mmol/L | 5% | 11% |



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| | | Rilpivirine + FTC/TDF | Efavirenz + FTC/TDF |
|---|---|---|---|
| **Laboratory Parameter Abnormality, (%)** | **DAIDS Toxicity Range** | **N=550** | **N=546** |
| | 160-190 mg/dL | | |
| Grade 3 | >4.91 mmol/L<br>>191 mg/dL | 1% | 2% |
| Increased Triglycerides (fasted) | | | |
| Grade 2 | 5.65-8.48 mmol/L<br>500-750 mg/dL | 1% | 1% |
| Grade 3 | 8.49-13.56 mmol/L<br>751-1,200 mg/dL | <1% | 1% |

N = number of subjects per treatment group

a. ULN = Upper limit of normal value.

Note: Percentages were calculated versus the number of subjects in ITT population with emtricitabine + tenofovir DF as background regimen.

*Emtricitabine or Tenofovir Disoproxil Fumarate:* The following laboratory abnormalities have been previously reported in subjects treated with emtricitabine or tenofovir DF with other antiretroviral agents in other clinical trials: Grade 3 or 4 laboratory abnormalities of increased pancreatic amylase (>2.0 x ULN), increased serum amylase (>175 U/L), increased lipase (>3.0 x ULN), increased alkaline phosphatase (>550 U/L), increased or decreased serum glucose (<40 or >250 mg/dL), increased glycosuria (≥3+), increased creatine kinase (M: >990 U/L; F: >845 U/L), decreased neutrophils (<750/mm$^3$) and increased hematuria (>75 RBC/HPF) occurred.

*Adrenal Function*

In the pooled Phase 3 trials of C209 and C215, in subjects treated with rilpivirine plus any of the allowed background regimen (N=686), at Week 48, the overall mean change from baseline in basal cortisol showed a decrease of -13.1 nmol/L in the rilpivirine group, and an increase of +9.0 nmol/L in the efavirenz group. At Week 48, the mean change from baseline in ACTH-stimulated cortisol levels was lower in the rilpivirine group (+16.5 ± 6.14 nmol/L) than in the efavirenz group (+58.1 ± 6.66 nmol/L). Mean values for both basal and ACTH-stimulated cortisol values at Week 48 were within the normal range. Overall, there were no serious adverse events, deaths, or treatment discontinuations that could clearly be attributed to adrenal insufficiency. Effects on adrenal function were comparable by background N(t)RTIs.

*Serum Creatinine*

In the pooled Phase 3 trials of C209 and C215 trials in subjects treated with rilpivirine plus any of the allowed background regimen (N=686), increases in serum creatinine occurred within the first four weeks of treatment and remained stable through 48 weeks. A mean change of 0.09 mg/dL (range: -0.20 mg/dL to 0.62 mg/dL) was observed after 48 weeks of treatment. In subjects who entered the trial with mild or moderate renal impairment, the serum creatinine increase observed was similar to that seen in subjects



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with normal renal function. These changes are not considered to be clinically relevant and no subject discontinued treatment due to increases in serum creatinine. Creatinine increases were comparable by background N(t)RTIs.

*Serum Lipids*

Changes from baseline in total cholesterol, LDL-cholesterol and triglycerides are presented in Table 3.

**Table 3 Lipid Values Reported in Subjects Receiving Rilpivirine or Efavirenz in Combination with Emtricitabine/Tenofovir DF in Studies C209 and C215[a]**

| | Pooled Data from the C209 and C215 Trials | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Rilpivirine + FTC/TDF N=550 | | | | Efavirenz + FTC/TDF N=546 | | | |
| | N | Baseline | Week 48 | | N | Baseline | Week 48 | |
| Mean | | Mean (mg/dL) | Mean (mg/dL) | Mean Change[b] (mg/dL) | | Mean (mg/dL) | Mean (mg/dL) | Mean Change[b] (mg/dL) |
| Total Cholesterol (fasted) | 460 | 162 | 162 | 0 | 438 | 160 | 185 | 25 |
| HDL-cholesterol (fasted) | 459 | 42 | 45 | 3 | 437 | 40 | 49 | 9 |
| LDL-cholesterol (fasted) | 457 | 97 | 95 | -2 | 436 | 95 | 109 | 13 |
| Triglycerides (fasted) | 460 | 122 | 111 | -11 | 438 | 129 | 138 | 8 |

N = number of subjects per treatment group

a. Excludes subjects who received lipid lowering agents during the treatment period.

b. The change from baseline is the mean of within-patient changes from baseline for patients with both baseline and Week 48 values.

*Subjects Coinfected with Hepatitis B and/or Hepatitis C Virus*

In patients coinfected with hepatitis B or C virus receiving rilpivirine in studies C209 and C215, the incidence of hepatic enzyme elevation was higher than in subjects receiving rilpivirine who were not coinfected. The same increase was also observed in the efavirenz arm. The pharmacokinetic exposure of rilpivirine in coinfected subjects was comparable to that in subjects without coinfection.

### 6.2 Postmarketing Experience

The following adverse reactions have been identified during postapproval use of emtricitabine or tenofovir DF. Because postmarketing reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

*Emtricitabine:*

No postmarketing adverse reactions have been identified for inclusion in this section.

*Tenofovir Disoproxil Fumarate:*



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Immune System Disorders
allergic reaction, including angioedema

Metabolism and Nutrition Disorders
lactic acidosis, hypokalemia, hypophosphatemia

Respiratory, Thoracic, and Mediastinal Disorders
dyspnea

Gastrointestinal Disorders
pancreatitis, increased amylase, abdominal pain

Hepatobiliary Disorders
hepatic steatosis, hepatitis, increased liver enzymes (most commonly AST, ALT gamma GT)

Skin and Subcutaneous Tissue Disorders
rash

Musculoskeletal and Connective Tissue Disorders
rhabdomyolysis, osteomalacia (manifested as bone pain and which may contribute to fractures), muscular weakness, myopathy

Renal and Urinary Disorders
acute renal failure, renal failure, acute tubular necrosis, Fanconi syndrome, proximal renal tubulopathy, interstitial nephritis (including acute cases), nephrogenic diabetes insipidus, renal insufficiency, increased creatinine, proteinuria, polyuria

General Disorders and Administration Site Conditions
asthenia

The following adverse reactions, listed under the body system headings above, may occur as a consequence of proximal renal tubulopathy: rhabdomyolysis, osteomalacia, hypokalemia, muscular weakness, myopathy, hypophosphatemia.

## 7 DRUG INTERACTIONS

COMPLERA is a complete regimen for the treatment of HIV-1 infection; therefore, COMPLERA should not be administered with other antiretroviral medications. Information regarding potential drug-drug interactions with other antiretroviral medications is not provided. Please refer to the EDURANT, VIREAD and EMTRIVA prescribing information as needed.

There were no drug-drug interaction trials conducted with the fixed-dose combination tablet. Drug interaction studies were conducted with emtricitabine, rilpivirine, or tenofovir DF, the components of COMPLERA. This section describes clinically relevant drug interactions with COMPLERA *[See Contraindications (4) and Clinical Pharmacology (12.3)]*.

### 7.1 Drugs Inducing or Inhibiting CYP3A Enzymes

Rilpivirine is primarily metabolized by cytochrome P450 (CYP) 3A, and drugs that induce or inhibit CYP3A may thus affect the clearance of rilpivirine *[See Clinical Pharmacology (12.3), Contraindications (4)]*. Coadministration of rilpivirine and drugs



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that induce CYP3A may result in decreased plasma concentrations of rilpivirine and loss of virologic response and possible resistance to rilpivirine or to the class of NNRTIs. Coadministration of rilpivirine and drugs that inhibit CYP3A may result in increased plasma concentrations of rilpivirine.

Rilpivirine at a dose of 25 mg once daily is not likely to have a clinically relevant effect on the exposure of drugs metabolized by CYP enzymes.

### 7.2 Drugs Increasing Gastric pH

Coadministration of rilpivirine with drugs that increase gastric pH may decrease plasma concentrations of rilpivirine and loss of virologic response and possible resistance to rilpivirine or to the class of NNRTIs *[See Table 4].*

### 7.3 Drugs Affecting Renal Function

Because emtricitabine and tenofovir are primarily eliminated by the kidneys through a combination of glomerular filtration and active tubular secretion, coadministration of COMPLERA with drugs that reduce renal function or compete for active tubular secretion may increase serum concentrations of emtricitabine, tenofovir, and/or other renally eliminated drugs. Some examples of drugs that are eliminated by active tubular secretion include, but are not limited to, acyclovir, adefovir dipivoxil, cidofovir, ganciclovir, valacyclovir, and valganciclovir.

### 7.4 QT Prolonging Drugs

There is limited information available on the potential for a pharmacodynamic interaction between rilpivirine and drugs that prolong the QTc interval of the electrocardiogram. In a study of healthy subjects, supratherapeutic doses of rilpivirine (75 mg once daily and 300 mg once daily) have been shown to prolong the QTc interval of the electrocardiogram *[See Clinical Pharmacology (12.2)]*. COMPLERA should be used with caution when coadministered with a drug with a known risk of Torsade de Pointes.

### 7.5 Established and Other Potentially Significant Drug Interactions

Important drug interaction information for COMPLERA is summarized in Table 4. The drug interactions described are based on studies conducted with emtricitabine, rilpivirine, or tenofovir DF as individual medications that may occur with COMPLERA or are potential drug interactions; no drug interaction studies have been conducted using COMPLERA [for pharmacokinetic data see *Clinical Pharmacology (12.3)*, Tables 6-7]. The tables include potentially significant interactions, but are not all inclusive.



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**Table 4 Established and Other Potentially Significant[a] Drug Interactions: Alteration in Dose or Regimen May Be Recommended Based on Drug Interaction Studies or Predicted Interaction**

| Concomitant Drug Class: Drug Name | Effect on Concentration[b] | Clinical Comment |
|---|---|---|
| **Antacids:**<br>antacids (e.g., aluminium, magnesium hydroxide, or calcium carbonate) | ↔ rilpivirine (antacids taken at least 2 hours before or at least 4 hours after rilpivirine)<br>↓ rilpivirine (concomitant intake) | The combination of COMPLERA and antacids should be used with caution as coadministration may cause significant decreases in rilpivirine plasma concentrations (increase in gastric pH). Antacids should only be administered either at least 2 hours before or at least 4 hours after COMPLERA. |
| **Azole Antifungal Agents:**<br>fluconazole<br>itraconazole<br>ketoconazole<br>posaconazole<br>voriconazole | ↑ rilpivirine[c,d]<br>↓ ketoconazole[c,d] | Concomitant use of COMPLERA with azole antifungal agents may cause an increase in the plasma concentrations of rilpivirine (inhibition of CYP3A enzymes). No dose adjustment is required when COMPLERA is coadministered with azole antifungal agents. Clinically monitor for breakthrough fungal infections when azole antifungals are coadministered with COMPLERA. |
| **$H_2$-Receptor Antagonists:**<br>cimetidine<br>famotidine<br>nizatidine<br>ranitidine | ↔ rilpivirine[c,d] (famotidine taken 12 hours before rilpivirine or 4 hours after rilpivirine)<br>↓ rilpivirine[c,d] (famotidine taken 2 hours before rilpivirine) | The combination of COMPLERA and $H_2$-receptor antagonists should be used with caution as coadministration may cause significant decreases in rilpivirine plasma concentrations (increase in gastric pH). $H_2$-receptor antagonists should only be administered at least 12 hours before or at least 4 hours after COMPLERA. |
| **Macrolide Antibiotics:**<br>clarithromycin<br>erythromycin<br>troleandomycin | ↑ rilpivirine<br>↔ clarithromycin<br>↔ erythromycin<br>↔ troleandomycin | Concomitant use of COMPLERA with clarithromycin, erythromycin and troleandomycin may cause an increase in the plasma concentrations of rilpivirine (inhibition of CYP3A enzymes). Where possible, alternatives such as azithromycin should be considered. |
| **Narcotic Analgesics**:<br>methadone | ↓ R(–) methadone[c]<br>↓ S(+) methadone[c]<br>↔ rilpivirine[c]<br>↔ methadone[c] (when used with tenofovir) | No dose adjustments are required when initiating coadministration of methadone with COMPLERA. However, clinical monitoring is recommended as methadone maintenance therapy may need to be adjusted in some patients. |

a. This table is not all inclusive.

b. Increase = ↑; Decrease = ↓; No Effect = ↔

c. The interaction was evaluated in a clinical study. All other drug-drug interactions shown are predicted.

d. This interaction study has been performed with a dose higher than the recommended dose for rilpivirine. The dosing recommendation is applicable to the recommended dose of rilpivirine 25 mg once daily.

## 7.6 Drugs with No Observed or Predicted Interactions with COMPLERA

No clinically significant drug interactions have been observed between emtricitabine and the following medications: famciclovir or tenofovir DF. Similarly, no clinically significant drug interactions have been observed between tenofovir DF and the following



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medications: entecavir, methadone, oral contraceptives, ribavirin, or tacrolimus in studies conducted in healthy subjects.

No clinically significant drug interactions have been observed between rilpivirine and the following medications: acetaminophen, atorvastatin, chlorzoxazone, ethinylestradiol, norethindrone, sildenafil, or tenofovir DF. No clinically relevant drug-drug interaction is expected when rilpivirine is coadministered with ribavirin.

## 8 USE IN SPECIFIC POPULATIONS

### 8.1 Pregnancy

*Pregnancy Category B*

*Emtricitabine:* The incidence of fetal variations and malformations was not increased in embryofetal toxicity studies performed with emtricitabine in mice at exposures (AUC) approximately 60 times higher and in rabbits at approximately 120-times higher than human exposures at the recommended daily dose.

*Rilpivirine:* Studies in animals have shown no evidence of embryonic or fetal toxicity or an effect on reproductive function. In offspring from rat and rabbit dams treated with rilpivirine during pregnancy and lactation, there were no toxicologically significant effects on developmental endpoints. The exposures at the embryo-fetal No Observed Adverse Effects Levels in rats and rabbits were respectively 15 and 70 times higher than the exposure in humans at the recommended dose of 25 mg once daily.

*Tenofovir Disoproxil Fumarate:* Reproduction studies have been performed in rats and rabbits at doses up to 14 and 19 times the human dose based on body surface area comparisons and revealed no evidence of impaired fertility or harm to the fetus due to tenofovir.

There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, COMPLERA should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

*Antiretroviral Pregnancy Registry:* To monitor fetal outcomes of pregnant women exposed to COMPLERA, an Antiretroviral Pregnancy Registry has been established. Healthcare providers are encouraged to register patients by calling 1-800-258-4263.

### 8.3 Nursing Mothers

**The Centers for Disease Control and Prevention recommend that HIV infected mothers not breastfeed their infants to avoid risking postnatal transmission of HIV.** Studies in rats have demonstrated that tenofovir is secreted in milk. Studies in lactating rats and their offspring indicate that rilpivirine was present in rat milk. It is not known whether emtricitabine, rilpivirine, or tenofovir is excreted in human milk. Because of both the potential for HIV transmission and the potential for serious adverse reactions in nursing infants, **mothers should be instructed not to breastfeed if they are receiving COMPLERA**.



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### 8.4 Pediatric Use

COMPLERA is not recommended for patients less than 18 years of age because not all the individual components of the COMPLERA have safety, efficacy and dosing recommendations available for all pediatric age groups *[See Clinical Pharmacology (12.3)]*.

### 8.5 Geriatric Use

Clinical studies of emtricitabine, rilpivirine, or tenofovir DF did not include sufficient numbers of subjects aged 65 and over to determine whether they respond differently from younger subjects. In general, dose selection for the elderly patients should be cautious, keeping in mind the greater frequency of decreased hepatic, renal, or cardiac function, and of concomitant disease or other drug therapy *[See Clinical Pharmacology (12.3)].*

### 8.6 Renal Impairment

Because COMPLERA is a fixed-dose combination, it should not be prescribed for patients requiring dosage adjustment such as those with moderate, severe or end stage renal impairment (creatinine clearance below 50 mL per minute) or that require dialysis *[See Warnings and Precautions (5.3*), *Clinical Pharmacology (12.3)]*.

### 8.7 Hepatic Impairment

No dose adjustment of COMPLERA is required in patients with mild (Child-Pugh Class A) or moderate (Child-Pugh Class B) hepatic impairment. COMPLERA has not been studied in patients with severe hepatic impairment (Child-Pugh Class C) *[See Clinical Pharmacology (12.3)]*.

## 10 OVERDOSAGE

If overdose occurs the patient must be monitored for evidence of toxicity. Treatment of overdose with COMPLERA consists of general supportive measures including monitoring of vital signs and ECG (QT interval) as well as observation of the clinical status of the patient.

*Emtricitabine:* Limited clinical experience is available at doses higher than the therapeutic dose of EMTRIVA. In one clinical pharmacology study, single doses of emtricitabine 1200 mg were administered to 11 subjects. No severe adverse reactions were reported. The effects of higher doses are not known.

Hemodialysis treatment removes approximately 30% of the emtricitabine dose over a 3-hour dialysis period starting within 1.5 hours of emtricitabine dosing (blood flow rate of 400 mL per minute and a dialysate flow rate of 600 mL per minute). It is not known whether emtricitabine can be removed by peritoneal dialysis.

*Rilpivirine:* There is no specific antidote for overdose with rilpivirine. Human experience of overdose with rilpivirine is limited. Since rilpivirine is highly bound to plasma protein, dialysis is unlikely to result in significant removal of rilpivirine.

If indicated, elimination of unabsorbed active substance may be achieved by gastric lavage. Administration of activated charcoal may also be used to aid in removal of unabsorbed active substance.



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*Tenofovir Disoproxil Fumarate:* Limited clinical experience at doses higher than the therapeutic dose of VIREAD 300 mg is available. In one study, 600 mg tenofovir DF was administered to 8 subjects orally for 28 days, and no severe adverse reactions were reported. The effects of higher doses are not known.

Tenofovir is efficiently removed by hemodialysis with an extraction coefficient of approximately 54%. Following a single 300 mg dose of VIREAD, a four-hour hemodialysis session removed approximately 10% of the administered tenofovir dose.

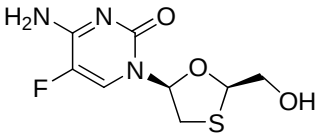
## 11 DESCRIPTION

COMPLERA is a fixed-dose combination tablet containing emtricitabine, rilpivirine hydrochloride, and tenofovir DF. EMTRIVA is the brand name for emtricitabine, a synthetic nucleoside analog of cytidine. EDURANT is the brand name for rilpivirine, a non-nucleoside reverse transcriptase inhibitor. VIREAD is the brand name for tenofovir DF, which is converted *in vivo* to tenofovir, an acyclic nucleoside phosphonate (nucleotide) analog of adenosine 5′-monophosphate. VIREAD and EMTRIVA are the components of TRUVADA.

COMPLERA tablets are for oral administration. Each tablet contains 200 mg of emtricitabine, 27.5 mg of rilpivirine hydrochloride (equivalent to 25 mg of rilpivirine), and 300 mg of tenofovir DF (equivalent to 245 mg of tenofovir disoproxil) as active ingredients. The tablets include the following inactive ingredients: pregelatinized starch, lactose monohydrate, microcrystalline cellulose, croscarmellose sodium, magnesium stearate, povidone, polysorbate 20. The tablets are film-coated with a coating material containing polyethylene glycol, hypromellose, lactose monohydrate, triacetin, titanium dioxide, iron oxide red, FD&C Blue #2 aluminum lake, FD&C Yellow #6 aluminum lake.

*Emtricitabine:* The chemical name of emtricitabine is 5-fluoro-1-[(2*R*,5*S*)-2-(hydroxymethyl)-1,3-oxathiolan-5-yl]cytosine. Emtricitabine is the (-) enantiomer of a thio analog of cytidine, which differs from other cytidine analogs in that it has a fluorine in the 5-position.

It has a molecular formula of $C_8H_{10}FN_3O_3S$ and a molecular weight of 247.24. It has the following structural formula:




Emtricitabine is a white to off-white crystalline powder with a solubility of approximately 112 mg per mL in water at 25 °C.

*Rilpivirine:* Rilpivirine is available as the hydrochloride salt. The chemical name for rilpivirine hydrochloride is 4-[[4-[[4-[(E)-2-cyanoethenyl]-2,6-dimethylphenyl]amino]-2-pyrimidinyl]amino]benzonitrile monohydrochloride. Its molecular formula is $C_{22}H_{18}N_6 \bullet HCl$ and its molecular weight is 402.88. Rilpivirine hydrochloride has the following structural formula:



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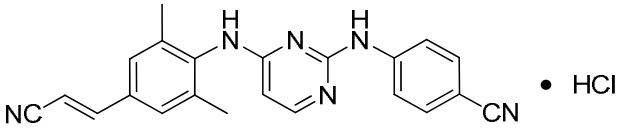
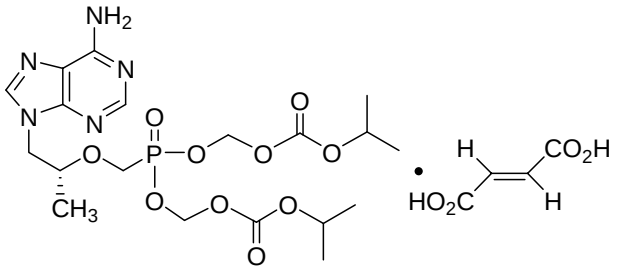


Rilpivirine hydrochloride is a white to almost white powder. Rilpivirine hydrochloride is practically insoluble in water over a wide pH range.

*Tenofovir Disoproxil Fumarate:* Tenofovir DF is a fumaric acid salt of the bis-isopropoxycarbonyloxymethyl ester derivative of tenofovir. The chemical name of tenofovir DF is 9-[(*R*)-2 [[bis[[(isopropoxycarbonyl)oxy]-methoxy]phosphinyl]methoxy]propyl]adenine fumarate (1:1). It has a molecular formula of $C_{19}H_{30}N_5O_{10}P \bullet C_4H_4O_4$ and a molecular weight of 635.52. It has the following structural formula:



Tenofovir DF is a white to off-white crystalline powder with a solubility of 13.4 mg per mL in water at 25 °C. All dosages are expressed in terms of tenofovir DF except where otherwise noted.

## 12 CLINICAL PHARMACOLOGY

### 12.1 Mechanism of Action

COMPLERA is a fixed-dose combination of antiviral drugs emtricitabine, rilpivirine and tenofovir disoproxil fumarate *[See Microbiology (12.4)].*

### 12.2 Pharmacodynamics

*Effects on Electrocardiogram*

The effect of rilpivirine at the recommended dose of 25 mg once daily on the QTcF interval was evaluated in a randomized, placebo and active (moxifloxacin 400 mg once daily) controlled crossover study in 60 healthy adults, with 13 measurements over 24 hours at steady state. The maximum mean time-matched (95% upper confidence bound) differences in QTcF interval from placebo after baseline-correction was 4.8 (8.2) milliseconds (i.e., below the threshold of clinical concern).

When supratherapeutic doses of 75 mg once daily and 300 mg once daily of rilpivirine were studied in healthy adults, the maximum mean time-matched (95% upper confidence bound) differences in QTcF interval from placebo after baseline-correction were 10.7 (15.3) and 23.3 (28.4) milliseconds, respectively. Steady-state administration of rilpivirine 75 mg once daily and 300 mg once daily resulted in a mean steady-state $C_{max}$ approximately 2.6-fold and 6.7-fold, respectively, higher than the mean $C_{max}$



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observed with the recommended 25 mg once daily dose of rilpivirine *[See Warnings and Precautions (5.4)]*.

### 12.3 Pharmacokinetics

*COMPLERA:* Under fed conditions (total calorie content of the meal was approximately 400 kcal with approximately 13 grams of fat), rilpivirine, emtricitabine and tenofovir exposures were bioequivalent when comparing COMPLERA to EMTRIVA capsules (200 mg) plus EDURANT tablets (25 mg) plus VIREAD tablets (300 mg) following single-dose administration to healthy subjects (N=34).

Single-dose administration of COMPLERA tablet to healthy subjects under fasted conditions provided approximately 25% higher exposure of rilpivirine compared to administration of EMTRIVA capsules (200 mg) plus EDURANT tablets (25 mg) plus VIREAD tablets (300 mg), while exposures of emtricitabine and tenofovir were comparable (N=15).

*Emtricitabine:* Following oral administration, emtricitabine is absorbed with peak plasma concentrations occurring at 1–2 hours post-dose. Following multiple dose oral administration of EMTRIVA to 20 HIV-1 infected subjects, the mean steady-state plasma emtricitabine $C_{max}$ was 1.8 ± 0.7 μg per mL and the AUC over a 24-hour dosing interval was 10.0 ± 3.1 μg•hr per mL. The mean steady state plasma trough concentration at 24 hours post-dose was 0.09 μg per mL. The mean absolute bioavailability of EMTRIVA capsules was 93%. Less than 4% of emtricitabine binds to human plasma proteins *in vitro* over the range of 0.02 to 200 μg per mL. Following administration of radiolabelled emtricitabine, approximately 86% is recovered in the urine, approximately 14% in the feces and 13% is recovered as metabolites in the urine. The metabolites of emtricitabine include 3′-sulfoxide diastereomers (approximately 9% of the dose) and the glucuronic acid conjugate (approximately 4% of the dose). Emtricitabine is eliminated by a combination of glomerular filtration and active tubular secretion with a renal clearance in adults with creatinine clearance >80 mL per minute of 213 ± 89 mL per minute (mean ± SD). The plasma emtricitabine half-life is approximately 10 hours.

*Rilpivirine:* The pharmacokinetic properties of rilpivirine have been evaluated in adult healthy subjects and in adult antiretroviral treatment-naive HIV-1 infected subjects. Exposure to rilpivirine was generally lower in HIV-1 infected subjects than in healthy subjects. After oral administration, the $C_{max}$ of rilpivirine is achieved within 4–5 hours. The absolute bioavailability of rilpivirine is unknown.



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**Table 5 Population Pharmacokinetic Estimates of Rilpivirine 25 mg Once Daily in Antiretroviral Treatment-Naive HIV-1-infected Subjects (Pooled Data from Phase 3 Trials through Week 48)**

| Parameter | Rilpivirine 25 mg once daily N=679 |
|---|---|
| $AUC_{24h}$ (ng•h/mL) | |
| Mean ± Standard Deviation | 2397 ± 1032 |
| Median (Range) | 2204 (482 - 8601) |
| $C_{0h}$ (ng/mL) | |
| Mean ± Standard Deviation | 80 ± 37 |
| Median (Range) | 74 (1 - 300) |

Rilpivirine is approximately 99.7% bound to plasma proteins *in vitro*, primarily to albumin. *In vitro* experiments indicate that rilpivirine primarily undergoes oxidative metabolism by the cytochrome CYP3A system. The terminal elimination half-life of rilpivirine is approximately 50 hours. After single dose oral administration of $^{14}C$-rilpivirine, on average 85% and 6.1% of the radioactivity could be retrieved in feces and urine, respectively. In feces, unchanged rilpivirine accounted for on average 25% of the administered dose. Only trace amounts of unchanged rilpivirine (less than 1% of dose) were detected in urine.

*Tenofovir Disoproxil Fumarate:* Following oral administration of a single 300 mg dose of VIREAD to HIV-1 infected subjects in the fasted state, $C_{max}$ was achieved in one hour. $C_{max}$ and AUC values were 0.30 ± 0.09 μg per mL and 2.29 ± 0.69 μg•hr per mL, respectively. The oral bioavailability of tenofovir from VIREAD in fasted subjects is approximately 25%. Less than 0.7% of tenofovir binds to human plasma proteins *in vitro* over the range of 0.01 to 25 μg per mL. Approximately 70-80% of the intravenous dose of tenofovir is recovered as unchanged drug in the urine within 72 hours of dosing. Tenofovir is eliminated by a combination of glomerular filtration and active tubular secretion with a renal clearance in adults with creatinine clearance >80 mL per minute of 243.5 ± 33.3 mL per minute (mean ± SD). Following a single oral dose, the terminal elimination half-life of tenofovir is approximately 17 hours.

*Effects of Food on Oral Absorption*

Take COMPLERA with a meal. A food effect trial was not conducted for COMPLERA. Therefore, the specific effect of food with COMPLERA tablets on rilpivirine, emtricitabine and tenofovir exposure has not been established. The recommendation to administer COMPLERA with a meal is based on the increased exposure that was observed when rilpivirine tablets were administered under fed conditions.

*Special Populations*

Race

*Emtricitabine:* No pharmacokinetic differences due to race have been identified following the administration of EMTRIVA.



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*Rilpivirine:* Population pharmacokinetic analysis of rilpivirine in HIV-1 infected subjects indicated that race had no clinically relevant effect on the exposure to rilpivirine.

*Tenofovir Disoproxil Fumarate:* There were insufficient numbers from racial and ethnic groups other than Caucasian to adequately determine potential pharmacokinetic differences among these populations following the administration of VIREAD.

Gender

No clinically relevant pharmacokinetic differences have been observed between men and women for emtricitabine, rilpivirine, and tenofovir DF.

Pediatric Patients

Emtricitabine has been studied in pediatric subjects from 3 months to 17 years of age. Tenofovir DF has been studied in adolescent subjects (12 to less than 18 years of age). The pharmacokinetics of rilpivirine in pediatric subjects have not been established.

Geriatric Patients

Pharmacokinetics of emtricitabine, rilpivirine and tenofovir have not been fully evaluated in the elderly (65 years of age and older) *[See Use in Specific Populations (8.5)].*

Patients with Renal Impairment

*Emtricitabine and Tenofovir Disoproxil Fumarate:* The pharmacokinetics of emtricitabine and tenofovir DF are altered in subjects with renal impairment. In subjects with creatinine clearance below 50 mL per minute or with end stage renal disease requiring dialysis, $C_{max}$, and AUC of emtricitabine and tenofovir were increased *[See Warnings and Precautions (5.3) and Use in Specific Populations (8.6)]*.

*Rilpivirine:* Population pharmacokinetic analysis indicated that rilpivirine exposure was similar in HIV-1 infected subjects with mild renal impairment relative to HIV-1 infected subjects with normal renal function. There is limited or no information regarding the pharmacokinetics of rilpivirine in patients with moderate or severe renal impairment or in patients with end-stage renal disease, and rilpivirine concentrations may be increased due to alteration of drug absorption, distribution, and metabolism secondary to renal dysfunction *[See Use in Specific Populations (8.6)]*.

Patients with Hepatic Impairment

*Emtricitabine:* The pharmacokinetics of emtricitabine have not been studied in subjects with hepatic impairment; however, emtricitabine is not significantly metabolized by liver enzymes, so the impact of liver impairment should be limited.

*Rilpivirine:* Rilpivirine is primarily metabolized and eliminated by the liver. In a study comparing 8 subjects with mild hepatic impairment (Child-Pugh score A) to 8 matched controls and 8 subjects with moderate hepatic impairment (Child-Pugh score B) to 8 matched controls, the multiple dose exposure of rilpivirine was 47% higher in subjects with mild hepatic impairment and 5% higher in subjects with moderate hepatic impairment *[See Use in Specific Populations (8.7)]*.

*Tenofovir Disoproxil Fumarate:* The pharmacokinetics of tenofovir following a 300 mg dose of VIREAD have been studied in non-HIV infected subjects with moderate to



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severe hepatic impairment. There were no substantial alterations in tenofovir pharmacokinetics in subjects with hepatic impairment compared with unimpaired subjects.

Hepatitis B and/or Hepatitis C Virus Coinfection

Pharmacokinetics of emtricitabine and tenofovir DF have not been fully evaluated in hepatitis B and/or C virus-coinfected patients. Population pharmacokinetic analysis indicated that hepatitis B and/or C virus coinfection had no clinically relevant effect on the exposure to rilpivirine.

*Assessment of Drug Interactions*

COMPLERA is a complete regimen for the treatment of HIV-1 infection; therefore, COMPLERA should not be administered with other antiretroviral medications. Information regarding potential drug-drug interactions with other antiretroviral medications is not provided. Please refer to the EDURANT, VIREAD and EMTRIVA prescribing information as needed.

The drug interaction studies described were conducted with emtricitabine, rilpivirine, or tenofovir DF as individual agents; no drug interaction studies have been conducted using COMPLERA.

*Emtricitabine and Tenofovir Disoproxil Fumarate: In vitro* and clinical pharmacokinetic drug-drug interaction studies have shown that the potential for CYP mediated interactions involving emtricitabine and tenofovir with other medicinal products is low.

Emtricitabine and tenofovir are primarily excreted by the kidneys by a combination of glomerular filtration and active tubular secretion. No drug-drug interactions due to competition for renal excretion have been observed; however, coadministration of emtricitabine and tenofovir DF with drugs that are eliminated by active tubular secretion may increase concentrations of emtricitabine, tenofovir, and/or the coadministered drug *[See Drug Interactions (7.6)]*.

Drugs that decrease renal function may increase concentrations of emtricitabine and/or tenofovir.

Drug interaction studies were performed for emtricitabine and the following medications: tenofovir DF and famciclovir. Tenofovir increased the $C_{min}$ of emtricitabine by 20% (90% confidence interval [CI]: [↑12 to ↑29]) and had no effect on emtricitabine $C_{max}$ and AUC. Emtricitabine had no effect on the $C_{max}$, AUC and $C_{min}$ of tenofovir. Coadministration of emtricitabine and famciclovir had no effect on the $C_{max}$ or AUC of either medication.

Drug interaction studies were performed for tenofovir DF and the following medications: entecavir, methadone, oral contraceptives (ethinyl estrodiol/norgestimate), ribavirin, and tacrolimus. Tacrolimus increased the $C_{max}$ of tenofovir by 13% (90% CI: [↑1 to ↑27]) and had no effect on the tenofovir AUC and $C_{min}$. Tenofovir had no effect on the $C_{max}$, AUC and $C_{min}$ of tacrolimus.



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The $C_{max}$, AUC and $C_{min}$ of tenofovir were not affected in the presence of entecavir. Tenofovir increased the AUC of entecavir by 13% (90% CI: [↑11 to ↑15]) and had no effect on the entecavir $C_{max}$ and $C_{min}$.

Tenofovir had no effect on the $C_{max}$, AUC and $C_{min}$ of methadone, ethinyl or ethinyl estrodiol/norgestimate or the $C_{max}$ and AUC of ribavirin.

*Rilpivirine:* Rilpivirine is primarily metabolized by cytochrome CYP3A, and drugs that induce or inhibit CYP3A may thus affect the clearance of rilpivirine. Coadministration of COMPLERA and drugs that induce CYP3A may result in decreased plasma concentrations of rilpivirine and loss of virologic response and possible resistance. Coadministration of COMPLERA and drugs that inhibit CYP3A may result in increased plasma concentrations of rilpivirine. Coadministration of COMPLERA with drugs that increase gastric pH may result in decreased plasma concentrations of rilpivirine and loss of virologic response and possible resistance to rilpivirine and to the class of NNRTIs.

Rilpivirine at a dose of 25 mg once daily is not likely to have a clinically relevant effect on the exposure of medicinal products metabolized by CYP enzymes.

The effects of coadministration of other drugs on the AUC, $C_{max}$ and $C_{min}$ values of rilpivirine are summarized in Table 6. The effect of coadministration of rilpivirine on the AUC, $C_{max}$ and $C_{min}$ values of other drugs are summarized in Table 7. For information regarding clinical recommendations, see *Drug Interactions (7)*.



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**Table 6 Drug Interactions: Changes in Pharmacokinetic Parameters for Rilpivirine in the Presence of the Coadministered Drugs**

| Coadministered Drug | Dose of Coadministered Drug (mg) | Dose of Rilpivirine | N | Mean % Change of Rilpivirine Pharmacokinetic Parameters[a] (90% CI) | | |
|---|---|---|---|---|---|---|
| | | | | $C_{max}$ | AUC | $C_{min}$ |
| Acetaminophen | 500 mg single dose | 150 mg once daily[b] | 16 | ↑ 9 (↑ 1 to ↑ 18) | ↑ 16 (↑ 10 to ↑ 22) | ↑ 26 (↑ 16 to ↑ 38) |
| Atorvastatin | 40 mg once daily | 150 mg once daily[b] | 16 | ↓ 9 (↓ 21 to↑ 6) | ↓ 10 (↓ 19 to ↓ 1) | ↓ 10 (↓ 16 to ↓ 4) |
| Chlorzoxazone | 500 mg single dose | 150 mg once daily[b] | 16 | ↑ 17 (↑ 8 to ↑ 27) | ↑ 25 (↑ 16 to ↑ 35) | ↑ 18 (↑ 9 to ↑ 28) |
| Ethinylestradiol/ Norethindrone | 0.035 mg once daily/1 mg once daily | 25 mg once daily | 16 | ↔[c] | ↔[c] | ↔[c] |
| Famotidine | 40 mg single dose taken 12 hours before rilpivirine | 150 mg single dose[b] | 24 | ↓ 1 (↓ (↓ 16 to↑ ↑16) | ↓ 9 (↓ (↓ 22 to ↑ 7) | NA |
| | 40 mg single dose taken 2 hours before rilpivirine | 150 mg single dose[b] | 23 | ↓ 85 (↓ 88 to ↓ 81) | ↓ 76 (↓ 80 to ↓ 72) | NA |
| | 40 mg single dose taken 4 hours after rilpivirine | 150 mg single dose[b] | 24 | ↑ 21 (↑ (↑ 6 to ↑ 39) | ↑ 13 (↑ (↑ 1 to ↑ 27) | NA |
| Ketoconazole | 400 mg once daily | 150 mg once daily[b] | 15 | ↑ 30 (↑ 13 to ↑ 48) | ↑ 49 (↑ 31 to ↑ 70) | ↑ 76 (↑ 57 to ↑ 97) |
| Methadone | 60 -100 mg once daily individualized dose | 25 mg once daily | 12 | ↔[c] | ↔[c] | ↔[c] |
| Omeprazole | 20 mg once daily | 150 mg once daily[b] | 16 | ↓ 40 (↓ 52 to ↓ 27) | ↓ 40 (↓ 49 to ↓ 29) | ↓ 33 (↓ 42 to ↓ 22) |
| Rifabutin | 300 mg once daily | 150 mg once daily[b] | 16 | ↓ 35 (↓ 42 to ↓ 26) | ↓ 46 (↓ 50 to ↓ 42) | ↓ 49 (↓ 52 to ↓ 46) |
| Rifampin | 600 mg once daily | 150 mg once daily[b] | 16 | ↓ 69 (↓ 73 to ↓ 64) | ↓ 80 (↓ 82 to ↓ 77) | ↓ 89 (↓ 90 to ↓ 87) |
| Sildenafil | 50 mg single dose | 75 mg once daily | 16 | ↓ 8 (↓ 15 to ↓ 1) | ↓ 2 (↓ 8 to ↑ 5) | ↑ 4 (↓ 2 to ↑ 9) |

NA = not available

a. Increase = ↑; Decrease = ↓; No Effect = ↔

b. The Interaction study has been performed with a dose higher than the recommended dose for rilpivirine (25 mg once daily) assessing the maximal effect on the coadministered drug.

c. Comparison based on historic controls.

**Table 7 Drug Interactions: Changes in Pharmacokinetic Parameters for Coadministered Drug in the Presence of Rilpivirine**

| Coadministered Drug | Dose of Coadministered Drug (mg) | Dose of Rilpivirine | N | Mean % Change of Coadministered Drug Pharmacokinetic Parameters[a] (90% CI) | | |
|---|---|---|---|---|---|---|
| | | | | $C_{max}$ | AUC | $C_{min}$ |
| Acetaminophen | 500 mg single dose | 150 mg once daily[b] | 16 | ↓ 3 (↓ 14 to ↑ 10) | ↓ 8 (↓ 15 to ↓ 1) | NA |
| Atorvastatin | 40 mg once daily | 150 mg once daily[b] | 16 | ↑ 35 (↑ 8 to ↑ 68) | ↑ 4 (↓ 3 to ↑ 12) | ↓ 15 (↓ 31 to ↑ 3) |
| 2-hydroxy-atorvastatin | | | 16 | ↑ 58 (↑ 33 to ↑ 87) | ↑ 39 (↑ 29 to ↑ 50) | ↑ 32 (↑ 10 to ↑ 58) |
| 4-hydroxy-atorvastatin | | | 16 | ↑ 28 (↑ 15 to ↑ 43) | ↑ 23 (↑ 13 to ↑ 33) | NA |
| Chlorzoxazone | 500 mg single dose | 150 mg once daily[b] | 16 | ↓ 2 (↓ 15 to ↑ 13) | ↑ 3 (↓ 5 to ↑ 13) | NA |
| Ethinylestradiol | 0.035 mg once daily | 25 mg once daily | 17 | ↑ 17 (↑ 6 to ↑ 30) | ↑ 14 (↑ 10 to ↑ 19) | ↑ 9 (↑ 3 to ↑ 16) |
| Norethindrone | 1 mg once daily | | 17 | ↓ 6 (↓ 17 to ↑ 6) | ↓ 11 (↓ 16 to ↓ 6) | ↓ 1 (↓ 10 to ↑ 8) |
| Ketoconazole | 400 mg once daily | 150 mg once daily[b] | 14 | ↓ 15 (↓ 20 to ↓ 10) | ↓ 24 (↓ 30 to ↓ 18) | ↓ 66 (↓ 75 to ↓ 54) |
| R(-) methadone | 60-100 mg once daily individualized dose | 25 mg once daily | 13 | ↓ 14 (↓ 22 to ↓ 5) | ↓ 16 (↓ 26 to ↓ 5) | ↓ 22 (↓ 33 to ↓ 9) |
| S(+) methadone | | | 13 | ↓ 13 (↓ 22 to ↓ 3) | ↓ 16 (↓ 26 to ↓ 4) | ↓ 21 (↓ 33 to ↓ 8) |
| Omeprazole | 20 mg once daily | 150 mg once daily[b] | 15 | ↓ 14 (↓ 32 to ↑ 9) | ↓ 14 (↓ 24 to ↓ 3) | NA |
| Rifampin | 600 mg once daily | 150 mg once daily[b] | 16 | ↑ 2 (↓ (↓ 7 to ↑ 12) | ↓ 1 (↓ (↓ 8 to ↑ 7) | NA |
| 25-desacetylrifampin | | | 16 | ↔ (↓↔ (↓ 13 to ↑ 15) | ↓↓ 9 (↓ (↓ 23 to ↑ 7) | NA |
| Sildenafil | 50 mg single dose | 75 mg once daily[b] | 16 | ↓ 7 (↓ 20 to ↑ 8) | ↓ 3 (↓ 13 to ↑ 8) | NA |
| *N*-desmethyl-sildenafil | | | 16 | ↓ 10 (↓ 20 to ↑ 2) | ↓ 8 (↓ 15 to↓ 1) | NA |

NA = not available

a. Increase = ↑; Decrease = ↓; No Effect = ↔

b. The Interaction study has been performed with a dose higher than the recommended dose for rilpivirine (25 mg once daily).



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## 12.4 Microbiology

Mechanism of Action

*Emtricitabine:* Emtricitabine, a synthetic nucleoside analog of cytidine, is phosphorylated by cellular enzymes to form emtricitabine 5'-triphosphate. Emtricitabine 5'-triphosphate inhibits the activity of the HIV-1 RT by competing with the natural substrate deoxycytidine 5'-triphosphate and by being incorporated into nascent viral DNA which results in chain termination. Emtricitabine 5′-triphosphate is a weak inhibitor of mammalian DNA polymerase $\alpha$, $\beta$, $\varepsilon$, and mitochondrial DNA polymerase $\gamma$.

*Rilpivirine:* Rilpivirine is a diarylpyrimidine non-nucleoside reverse transcriptase inhibitor of HIV-1 and inhibits HIV-1 replication by non-competitive inhibition of HIV-1 RT. Rilpivirine does not inhibit the human cellular DNA polymerases $\alpha$, $\beta$, and mitochondrial DNA polymerase $\gamma$.

*Tenofovir Disoproxil Fumarate:* Tenofovir DF is an acyclic nucleoside phosphonate diester analog of adenosine monophosphate. Tenofovir DF requires initial diester hydrolysis for conversion to tenofovir and subsequent phosphorylations by cellular enzymes to form tenofovir diphosphate. Tenofovir diphosphate inhibits the activity of HIV-1 RT by competing with the natural substrate deoxyadenosine 5′-triphosphate and, after incorporation into DNA, by DNA chain termination. Tenofovir diphosphate is a weak inhibitor of mammalian DNA polymerases $\alpha$, $\beta$, and mitochondrial DNA polymerase $\gamma$.

Antiviral Activity

*Emtricitabine, Rilpivirine, and Tenofovir Disoproxil Fumarate:* The triple combination of emtricitabine, rilpivirine, and tenofovir was not antagonistic in cell culture.

*Emtricitabine:* The antiviral activity of emtricitabine against laboratory and clinical isolates of HIV-1 was assessed in lymphoblastoid cell lines, the MAGI-CCR5 cell line, and peripheral blood mononuclear cells. The 50% effective concentration ($EC_{50}$) values for emtricitabine were in the range of 0.0013–0.64 $\mu$M. Emtricitabine displayed antiviral activity in cell culture against HIV-1 clades A, B, C, D, E, F, and G ($EC_{50}$ values ranged from 0.007–0.075 $\mu$M) and showed strain specific activity against HIV-2 ($EC_{50}$ values ranged from 0.007–1.5 $\mu$M). In drug combination studies of emtricitabine with nucleoside reverse transcriptase inhibitors (abacavir, lamivudine, stavudine, tenofovir, zidovudine), non-nucleoside reverse transcriptase inhibitors (delavirdine, efavirenz, nevirapine, and rilpivirine), and protease inhibitors (amprenavir, nelfinavir, ritonavir, saquinavir), no antagonistic effects were observed.

*Rilpivirine:* Rilpivirine exhibited activity against laboratory strains of wild-type HIV-1 in an acutely infected T-cell line with a median $EC_{50}$ value for HIV-$1_{IIIB}$ of 0.73 nM. Rilpivirine demonstrated limited activity in cell culture against HIV-2 with a median $EC_{50}$ value of 5220 nM (range 2510 to 10830 nM). Rilpivirine demonstrated antiviral activity against a broad panel of HIV-1 group M (subtype A, B, C, D, F, G, H) primary isolates with $EC_{50}$ values ranging from 0.07 to 1.01 nM and was less active against group O primary isolates with $EC_{50}$ values ranging from 2.88 to 8.45 nM. The antiviral activity of



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rilpivirine was not antagonistic when combined with the NNRTIs efavirenz, etravirine or nevirapine; N(t)RTIs abacavir, didanosine, emtricitabine, lamivudine, stavudine, tenofovir or zidovudine; the PIs amprenavir, atazanavir, darunavir, indinavir, lopinavir, nelfinavir, ritonavir, saquinavir or tipranavir; the fusion inhibitor enfuvirtide; the CCR5 co-receptor antagonist maraviroc or the integrase strand transfer inhibitor raltegravir.

*Tenofovir Disoproxil Fumarate:* The antiviral activity of tenofovir against laboratory and clinical isolates of HIV-1 was assessed in lymphoblastoid cell lines, primary monocyte/macrophage cells and peripheral blood lymphocytes. The $EC_{50}$ values for tenofovir were in the range of 0.04–8.5 μM. Tenofovir displayed antiviral activity in cell culture against HIV-1 clades A, B, C, D, E, F, G, and O ($EC_{50}$ values ranged from 0.5–2.2 μM) and showed strain specific activity against HIV-2 ($EC_{50}$ values ranged from 1.6 μM–5.5 μM). In drug combination studies of tenofovir with NRTIs (abacavir, didanosine, emtricitabine, lamivudine, stavudine, and zidovudine), NNRTIs (delavirdine, efavirenz, nevirapine, and rilpivirine), and PIs (amprenavir, indinavir, nelfinavir, ritonavir, saquinavir), no antagonistic effects were observed.

Resistance

*In Cell Culture*

*Emtricitabine and Tenofovir Disoproxil Fumarate:* HIV-1 isolates with reduced susceptibility to emtricitabine or tenofovir have been selected in cell culture. Reduced susceptibility to emtricitabine was associated with M184V/I substitutions in HIV-1 RT. HIV-1 isolates selected by tenofovir expressed a K65R substitution in HIV-1 RT and showed a 2–4 fold reduction in susceptibility to tenofovir.

*Rilpivirine:* Rilpivirine-resistant strains were selected in cell culture starting from wild-type HIV-1 of different origins and subtypes as well as NNRTI resistant HIV-1. The frequently observed amino acid substitutions that emerged and conferred decreased phenotypic susceptibility to rilpivirine included: L100I, K101E, V106I and A, V108I, E138K and G, Q, R, V179F and I, Y181C and I, V189I, G190E, H221Y, F227C and M230I and L.

*In Treatment-Naive HIV-1-infected Subjects*

In a pooled resistance analysis for subjects receiving rilpivirine in combination with emtricitabine/tenofovir DF in clinical trials C209 and C215 *[See Clinical Studies (14)]*, the emergence of resistance among subjects was greater in the rilpivirine arm compared to the efavirenz arm (see Table 8). In the combined studies, 44% (34/77) of the virologic failures in the rilpivirine arms had genotypic and phenotypic resistance to rilpivirine compared to 23% (10/43) of the virologic failures in the efavirenz arms who had genotypic and phenotypic resistance to efavirenz. Moreover, phenotypic and/or genotypic resistance to emtricitabine and tenofovir emerged in 51% (39/77) and 9% (7/77) of the virologic failures, respectively, in the rilpivirine arms compared to 16% (7/43) and 9% (4/43) in the efavirenz arms.

Emerging NNRTI substitutions in the rilpivirine virologic failures included V90I, K101E/P/T, E138K/G, V179I/L, Y181I/C, V189I, H221Y, F227C/L and M230L, which were associated with a rilpivirine phenotypic fold change range of 2.6–621. The E138K substitution emerged most frequently on rilpivirine treatment commonly in combination



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with the M184I substitution. The emtricitabine and lamivudine resistance-associated substitutions M184I or V emerged more frequently in rilpivirine virologic failures compared to efavirenz virologic failures (see Table 8).

**Table 8 Proportion of Frequently Emergent Reverse Transcriptase Substitutions in Virologic Failures in Subjects Who Received Rilpivirine or Efavirenz in Combination with Emtricitabine/Tenofovir DF in Studies C209 and C215**

| | **Rilpivirine + FTC/TDF** | **Efavirenz + FTC/TDF** |
|---|---|---|
| | **N=550** | **N=546** |
| **Virologic Failures (As-Treated)** | 77/523 (15%) | 43/480 (9%) |
| **Evaluable Post-Baseline Resistance Data** | 64 | 27 |
| **Emergent NNRTI Substitutions in Virologic Failures with Post-Baseline Data** | | |
| V90I | 13% (8/64) | 0 |
| K101E/P/T | 17% (11/64) | 0 |
| K103N | 0 | 30% (8/27) |
| V106M | 0 | 7% (2/27) |
| E138K/G | 38% (24/64) | 0 |
| E138K+M184I[a] | 30% (19/64) | 0 |
| V179I/D/L | 5% (3/64) | 4% (1/27) |
| V181C/I | 11% (7/64) | 0 |
| Y188C | 0 | 7% (2/27) |
| V189I | 8% (5/64) | 0 |
| H221Y | 9% (6/64) | 0 |
| **Emergent NRTI Substitutions in Virologic Failures with Post-Baseline Data** | | |
| M184I or V | 55% (35/64) | 19% (5/27) |
| K65R/N | 11% (7/64) | 7% (2/27) |

a. This combination of NNRTI substitutions is a subset of those with the E138K.

Cross Resistance

*Emtricitabine, Rilpivirine, and Tenofovir Disoproxil Fumarate:*

*In Cell Culture*

No significant cross-resistance has been demonstrated between rilpivirine-resistant HIV-1 variants and emtricitabine or tenofovir, or between emtricitabine- or tenofovir-resistant variants and rilpivirine.

*Rilpivirine:*

*Site-Directed NNRTI Mutant Virus*



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Cross-resistance has been observed among NNRTIs. The single NNRTI substitutions K101P, Y181I and Y181V conferred 52-fold, 15-fold and 12-fold decreased susceptibility to rilpivirine, respectively. The combination of E138K and M184I showed 6.7-fold reduced susceptibility to rilpivirine compared to 2.8-fold for E138K alone. The K103N substitution did not show reduced susceptibility to rilpivirine. Combinations of 2 or 3 NNRTI resistance-associated substitutions gave decreased susceptibility to rilpivirine (fold change range of 3.7–554) in 38% and 66% of mutants, respectively.

*In Treatment-Naive HIV-1-infected Subjects*

Considering all of the available cell culture and clinical data, any of the following amino acid substitutions, when present at baseline, are likely to decrease the antiviral activity of rilpivirine: K101E, K101P, E138A, E138G, E138K, E138R, E138Q, V179L, Y181C, Y181I, Y181V, H221Y, F227C, M230I or M230L.

Cross-resistance to efavirenz, etravirine and/or nevirapine is likely after virologic failure and development of rilpivirine resistance. In the pooled analysis for subjects receiving rilpivirine in combination with emtricitabine/tenofovir DF in clinical trials C209 and C215 *[See Clinical Studies (14)]*, 34 virologic failure subjects had evidence of rilpivirine resistance. Of these subjects, 91% (N=31) were resistant to etravirine and efavirenz, and 65% (N=22) were resistant to nevirapine. In the efavirenz arm, none of the 10 efavirenz-resistant virologic failures were resistant to etravirine at failure. Subjects experiencing virologic failure on rilpivirine developed more NNRTI resistance-associated substitutions conferring more cross-resistance to the NNRTI class and had a higher likelihood of cross-resistance to all NNRTIs in the class than subjects who failed on efavirenz.

*Emtricitabine:* Emtricitabine-resistant isolates (M184V/I) were cross-resistant to lamivudine but retained susceptibility in cell culture to didanosine, stavudine, tenofovir, zidovudine, and NNRTIs (delavirdine, efavirenz, nevirapine, and rilpivirine). HIV-1 isolates containing the K65R substitution, selected *in vivo* by abacavir, didanosine, and tenofovir, demonstrated reduced susceptibility to inhibition by emtricitabine. Viruses harboring substitutions conferring reduced susceptibility to stavudine and zidovudine (M41L, D67N, K70R, L210W, T215Y/F, K219Q/E), or didanosine (L74V) remained sensitive to emtricitabine. HIV-1 containing the substitutions associated with NNRTI resistance K103N or rilpivirine-associated substitutions were susceptible to emtricitabine.

*Tenofovir Disoproxil Fumarate:* The K65R substitution selected by tenofovir is also selected in some HIV-1 infected patients treated with abacavir or didanosine. HIV-1 isolates with the K65R substitution also showed reduced susceptibility to emtricitabine and lamivudine. Therefore, cross-resistance among these NRTIs may occur in patients whose virus harbors the K65R substitution. HIV-1 isolates from patients (N=20) whose HIV-1 expressed a mean of 3 zidovudine-associated RT amino acid substitutions (M41L, D67N, K70R, L210W, T215Y/F, or K219Q/E/N) showed a 3.1-fold decrease in the susceptibility to tenofovir.

Subjects whose virus expressed an L74V substitution without zidovudine resistance associated substitutions (N=8) had reduced response to VIREAD. Limited data are



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available for patients whose virus expressed a Y115F substitution (N=3), Q151M substitution (N=2), or T69 insertion (N=4), all of whom had a reduced response.

HIV-1 containing the substitutions associated with NNRTI resistance K103N and Y181C, or rilpivirine-associated substitutions were susceptible to tenofovir.

## 13 NONCLINICAL TOXICOLOGY

### 13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

*Emtricitabine:* In long-term carcinogenicity studies of emtricitabine, no drug-related increases in tumor incidence were found in mice at doses up to 750 mg per kg per day (26 times the human systemic exposure at the therapeutic dose of 200 mg per day) or in rats at doses up to 600 mg per kg per day (31 times the human systemic exposure at the therapeutic dose).

Emtricitabine was not genotoxic in the reverse mutation bacterial test (Ames test), mouse lymphoma or mouse micronucleus assays.

Emtricitabine did not affect fertility in male rats at approximately 140-fold or in male and female mice at approximately 60-fold higher exposures (AUC) than in humans given the recommended 200 mg daily dose. Fertility was normal in the offspring of mice exposed daily from before birth (in utero) through sexual maturity at daily exposures (AUC) of approximately 60-fold higher than human exposures at the recommended 200 mg daily dose.

*Rilpivirine:* Rilpivirine was evaluated for carcinogenic potential by oral gavage administration to mice and rats up to 104 weeks. Daily doses of 20, 60 and 160 mg per kg per day were administered to mice and doses of 40, 200, 500 and 1500 mg per kg per day were administered to rats. In rats, there were no drug related neoplasms. In mice, rilpivirine was positive for hepatocellular neoplasms in both males and females. The observed hepatocellular findings in mice may be rodent-specific. At the lowest tested doses in the carcinogenicity studies, the systemic exposures (based on AUC) to rilpivirine were 21 fold (mice) and 3 fold (rats), relative to those observed in humans at the recommended dose (25 mg once daily).

Rilpivirine has tested negative in the absence and presence of a metabolic activation system, in the *in vitro* Ames reverse mutation assay and *in vitro* clastogenicity mouse lymphoma assay. Rilpivirine did not induce chromosomal damage in the *in vivo* micronucleus test in mice.

In a study conducted in rats, there were no effects on mating or fertility with rilpivirine up to 400 mg per kg per day, a dose of rilpivirine that showed maternal toxicity. This dose is associated with an exposure that is approximately 40 times higher than the exposure in humans at the recommended dose of 25 mg once daily.

*Tenofovir Disoproxil Fumarate:* Long-term oral carcinogenicity studies of tenofovir DF in mice and rats were carried out at exposures up to approximately 16 times (mice) and 5 times (rats) those observed in humans at the therapeutic dose for HIV-1 infection. At the high dose in female mice, liver adenomas were increased at exposures 16 times that in humans. In rats, the study was negative for carcinogenic findings at exposures up to 5 times that observed in humans at the therapeutic dose.



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Tenofovir DF was mutagenic in the *in vitro* mouse lymphoma assay and negative in an *in vitro* bacterial mutagenicity test (Ames test). In an *in vivo* mouse micronucleus assay, tenofovir DF was negative when administered to male mice.

There were no effects on fertility, mating performance or early embryonic development when tenofovir DF was administered to male rats at a dose equivalent to 10 times the human dose based on body surface area comparisons for 28 days prior to mating and to female rats for 15 days prior to mating through day seven of gestation. There was, however, an alteration of the estrous cycle in female rats.

### 13.2 Animal Toxicology and/or Pharmacology

*Tenofovir Disoproxil Fumarate:* Tenofovir and tenofovir DF administered in toxicology studies to rats, dogs and monkeys at exposures (based on AUCs) greater than or equal to 6-fold those observed in humans caused bone toxicity. In monkeys the bone toxicity was diagnosed as osteomalacia. Osteomalacia observed in monkeys appeared to be reversible upon dose reduction or discontinuation of tenofovir. In rats and dogs, the bone toxicity manifested as reduced bone mineral density. The mechanism(s) underlying bone toxicity is unknown.

Evidence of renal toxicity was noted in 4 animal species. Increases in serum creatinine, BUN, glycosuria, proteinuria, phosphaturia, and/or calciuria and decreases in serum phosphate were observed to varying degrees in these animals. These toxicities were noted at exposures (based on AUCs) 2–20 times higher than those observed in humans. The relationship of the renal abnormalities, particularly the phosphaturia, to the bone toxicity is not known.

## 14 CLINICAL STUDIES

The efficacy of COMPLERA is based on the analyses of 48 week data from two randomized, double-blind, controlled studies C209 (ECHO) and C215 (THRIVE) in treatment-naive, HIV-1 infected subjects (N=1368). The studies are identical in design with the exception of the background regimen (BR). Subjects were randomized in a 1:1 ratio to receive either rilpivirine 25 mg (N=686) once daily or efavirenz 600 mg (N=682) once daily in addition to a BR. In Study C209 (N=690), the BR was emtricitabine/tenofovir DF. In Study C215 (N=678), the BR consisted of 2 NRTIs: emtricitabine/tenofovir DF (60%, N=406) or lamivudine/zidovudine (30%, N=204) or abacavir plus lamivudine (10%, N=68).

For subjects who received emtricitabine/tenofovir DF (N=1096) in C209 and C215, the mean age was 37 years (range 18-78), 78% were male, 62% were White, 24% were Black, and 11% were Asian. The mean baseline CD4+ cell count was 265 cells/mm$^3$ (range 1–888) and 31% had CD4+ cell counts <200 cells/mm$^3$. The median baseline plasma HIV-1 RNA was 5 $\log_{10}$ copies/mL (range 2–7). Subjects were stratified by baseline HIV-1 RNA. Fifty percent of subjects had baseline viral loads ≤100,000 copies/mL, 39% of subjects had baseline viral load between 100,000 copies/mL to 500,000 copies/mL and 11% of subject had baseline viral load >500,000 copies/mL. Treatment outcomes through 48 weeks for the subset of subjects receiving emtricitabine/tenofovir DF in studies C209 and C215 (Table 9) are generally



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consistent with treatment outcomes for all participating subjects (presented in the prescribing information for EDURANT).

**Table 9 Virologic Outcome of Randomized Treatment of Studies C209 and C215 (Pooled Data for Subjects Receiving Rilpivirine or Efavirenz in Combination with Emtricitabine/Tenofovir DF) at Week 48[a]**

| | **Rilpivirine + FTC/TDF** | **Efavirenz + FTC/TDF** |
|---|---|---|
| | **N=550** | **N=546** |
| **HIV-1 RNA <50 copies/mL[b]** | 83% | 81% |
| **Virologic failure[c]** | 13% | 8% |
| **No virologic data at Week 48 window** | | |
| **Reasons** | | |
| Discontinued study due to adverse event or death[d] | 2% | 7% |
| Discontinued study for other reasons[e] | 2% | 4% |
| Missing data during window but on study | 1% | <1% |
| **HIV-1 RNA <50 copies/mL by baseline plasma viral load (copies/mL)** | | |
| ≤100,000 | 89% | 86% |
| >100,000 to ≤500,000 | 78% | 78% |
| >500,000 | 66% | 72% |
| **Virologic failure[c] by baseline plasma viral load (copies/mL)** | | |
| ≤100,000 | 5% | 3% |
| >100,000 to ≤500,000 | 20% | 11% |
| >500,000 | 30% | 18% |

a. Analysis was based on the last observed viral load data within the Week 48 window (Week 44-54).

b. Predicted difference (95% CI) of response rate is 1 (-3 to 6).

c. Includes subjects who had ≥50 copies/mL in the Week 48 window, subjects who discontinued early due to lack or loss of efficacy, subjects who discontinued for reasons other than an adverse event, death or lack or loss of efficacy and at the time of discontinuation had a viral value of ≥50 copies/mL, and subjects who had a switch in background regimen that was not permitted by the protocol.

d. Includes subjects who discontinued due to an adverse event or death if this resulted in no on-treatment virologic data in the Week 48 window.

e. Includes subjects who discontinued for reasons other than an adverse event, death or lack or loss of efficacy, e.g., withdrew consent, loss to follow-up, etc.

Based on the pooled data from studies C209 and C215 at 48 weeks of treatment, the mean CD4+ cell count increase from baseline was 193 cells/mm$^3$ for rilpivirine plus emtricitabine/tenofovir DF-treated subjects and 182 cells/mm$^3$ for efavirenz plus emtricitabine/tenofovir DF-treated subjects.

## 16 HOW SUPPLIED/STORAGE AND HANDLING

COMPLERA tablets are purplish-pink, capsule-shaped, film-coated, debossed with “GSI” on one side and plain-faced on the other side. Each bottle contains 30 tablets

(NDC 61958-1101-1), a silica gel desiccant, polyester fiber coil, and is closed with a child-resistant closure.

Store at 25 °C (77 °F), excursions permitted to 15–30 °C (59–86 °F) (see USP Controlled Room Temperature).

- Keep container tightly closed
- Dispense only in original container
- Do not use if seal over bottle opening is broken or missing.

## 17 PATIENT COUNSELING INFORMATION

*See FDA-Approved Patient Labeling (Patient Information)*

A statement to patients and healthcare providers is included on the product's bottle label: **ALERT: Find out about medicines that should NOT be taken with COMPLERA from your healthcare provider.** A Patient Package Insert for COMPLERA is available for patient information.

### Information for Patients

Patients should be advised that:

- Patients should remain under the care of a healthcare provider when using COMPLERA.
- Patients should be informed that COMPLERA is not a cure for HIV infection. Patients should stay on continuous HIV therapy to control HIV infection and decrease HIV-related illnesses. Patients should be told that sustained decreases in plasma HIV RNA have been associated with a reduced risk of progression to AIDS and death.
- Patients should be advised to continue to practice safer sex and to use latex or polyurethane condoms to lower the chance of sexual contact with any body fluids such as semen, vaginal secretions or blood. Patients should be advised never to re-use or share needles.
- It is important to take COMPLERA on a regular dosing schedule with a meal and to avoid missing doses. A protein drink does not constitute a meal. If the patient misses a dose of COMPLERA within 12 hours of the time it is usually taken, the patient should take COMPLERA with a meal as soon as possible and then take the next dose of COMPLERA at the regularly scheduled time. If a patient misses a dose of COMPLERA by more than 12 hours, the patient should not take the missed dose, but resume the usual dosing schedule. Inform the patient that he or she should not take more or less than the prescribed dose of COMPLERA at any one time.
- Lactic acidosis and severe hepatomegaly with steatosis, including fatal cases, have been reported. Treatment with COMPLERA should be suspended in any patients who develop clinical symptoms suggestive of lactic acidosis or pronounced hepatotoxicity (including nausea, vomiting, unusual or unexpected stomach discomfort, and weakness) *[See Warnings and Precautions (5.1)]*.



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- Patients with HIV-1 should be tested for hepatitis B virus (HBV) before initiating antiretroviral therapy. Severe acute exacerbations of hepatitis B have been reported in patients who are coinfected with HBV and HIV-1 and have discontinued EMTRIVA or VIREAD *[See Warnings and Precautions (5.2)]*. COMPLERA should not be discontinued without first informing their healthcare provider.
- Renal impairment, including cases of acute renal failure and Fanconi syndrome, has been reported in association with the use of VIREAD. COMPLERA should be avoided with concurrent or recent use of a nephrotoxic agent *[See Warnings and Precautions (5.3)]*.
- COMPLERA may interact with many drugs; therefore, patients should be advised to report to their healthcare provider the use of any other prescription or nonprescription medication or herbal products, including St. John's wort *[See Warnings and Precautions (5.4)]*.
- COMPLERA should not be coadministered with the following drugs, as significant decreases in rilpivirine plasma concentrations may occur due to CYP3A enzyme induction or gastric pH increase, which may result in loss of virologic response and possible resistance to COMPLERA or to the class of NNRTIs: the anticonvulsants carbamazepine, oxcarbazepine, phenobarbital, phenytoin; the antimycobacterials rifabutin, rifampin, rifapentine; proton pump inhibitors, such as esomeprazole, lansoprazole, omeprazole, pantoprazole, rabeprazole; the glucocorticoid systemic dexamethasone (more than a single dose); or St. John's wort (*Hypericum perforatum*) *[See Contraindications (4)]*.
- Patients should be informed that depressive disorders (depressed mood, depression, dysphoria, major depression, mood altered, negative thoughts, suicide attempt, suicidal ideation) have been reported with COMPLERA. If they experience depressive symptoms, they should seek immediate medical evaluation *[See Warnings and Precautions (5.5)].*
- Decreases in bone mineral density have been observed with the use of VIREAD. Bone mineral density (BMD) monitoring should be considered in patients who have a history of pathologic bone fracture or other risk factors for osteoporosis or bone loss *[See Warnings and Precautions (5.6)].*
- COMPLERA should not be coadministered with ATRIPLA, TRUVADA, EMTRIVA, VIREAD or EDURANT; or with drugs containing lamivudine, including COMBIVIR, EPIVIR or EPIVIR-HBV, EPZICOM, or TRIZIVIR; or with HEPSERA *[See Warnings and Precautions (5.7)]*.
- Redistribution or accumulation of body fat may occur in patients receiving antiretroviral therapy and that the cause and long-term health effects of these conditions are not known *[See Warnings and Precautions (5.8)]*.
- In some patients with advanced HIV infection (AIDS), signs and symptoms of inflammation from previous infections may occur soon after anti-HIV treatment is started. It is believed that these symptoms are due to an improvement in the body's immune response, enabling the body to fight infections that may have been present



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with no obvious symptoms. Patients should be advised to inform their healthcare provider immediately of any symptoms of infection *[See Warnings and Precautions (5.9)].*



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## Patient Information

## COMPLERA™ (kom-PLEH-rah)
## (emtricitabine, rilpivirine and tenofovir disoproxil fumarate)
## Tablets

**Important: Ask your doctor or pharmacist about medicines that should not be taken with COMPLERA**. For more information, see the section "What should I tell my healthcare provider before taking COMPLERA?"

Read this Patient Information before you start taking COMPLERA and each time you get a refill. There may be new information. This information does not take the place of talking to your healthcare provider about your medical condition or treatment.

**What is the most important information I should know about COMPLERA?**

**COMPLERA can cause serious side effects, including:**

1. **Build-up of an acid in your blood (lactic acidosis).** Lactic acidosis can happen in some people who take COMPLERA or similar (nucleoside analogs) medicines. **Lactic acidosis** is a serious medical emergency that can lead to death.

   Lactic acidosis can be hard to identify early, because the symptoms could seem like symptoms of other health problems. **Call your healthcare provider right away if you get any of the following symptoms which could be signs of lactic acidosis:**

- feeling very weak or tired
- have unusual (not normal) muscle pain
- have trouble breathing
- have stomach pain with
  - nausea (feel sick to your stomach)
  - vomiting
- feel cold, especially in your arms and legs
- feel dizzy or lightheaded
- have a fast or irregular heartbeat

2. **Severe liver problems.** Severe liver problems can happen in people who take COMPLERA or similar medicines. In some cases these liver problems can lead to death. Your liver may become large (hepatomegaly) and you may develop fat in your liver (steatosis) when you take COMPLERA.

   **Call your healthcare provider right away if you have any of the following symptoms of liver problems:**



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- your skin or the white part of your eyes turns yellow (jaundice).
- dark “tea-colored” urine
- light-colored bowel movements (stools)
- loss of appetite for several days or longer
- nausea
- stomach pain

**You may be more likely to get lactic acidosis or severe liver problems if you are female, very overweight (obese), or have been taking COMPLERA or a similar medicine containing nucleoside analogs for a long time.**

3. **Worsening of Hepatitis B infection.** If you also have hepatitis B virus (HBV) infection and you stop taking COMPLERA, your HBV infection may become worse (flare-up). A “flare-up” is when your HBV infection suddenly returns in a worse way than before. COMPLERA is not approved for the treatment of HBV, so you must discuss your HBV therapy with your healthcare provider.

- Do not let your COMPLERA run out. Refill your prescription or talk to your healthcare provider before your COMPLERA is all gone.
- Do not stop taking COMPLERA without first talking to your healthcare provider.
- If you stop taking COMPLERA, your healthcare provider will need to check your health often and do regular blood tests to check your HBV infection. Tell your healthcare provider about any new or unusual symptoms you may have after you stop taking COMPLERA.

**What is COMPLERA?**

COMPLERA is a prescription HIV (Human Immunodeficiency Virus) medicine that:

- is used to treat HIV-1 in adults who have **never** taken HIV medicines before. HIV is the virus that causes AIDS (Acquired Immunodeficiency Syndrome).
- contains 3 medicines, (rilpivirine, emtricitabine, tenofovir disoproxil fumarate) combined in one tablet. EMTRIVA and VIREAD are HIV-1 (human immunodeficiency virus) nucleoside analog reverse transcriptase inhibitors (NRTIs) and EDURANT is an HIV-1 non-nucleoside analog reverse transcriptase inhibitor (NNRTI).

It is not known if COMPLERA is safe and effective in children under the age of 18 years.

**COMPLERA may help:**

- Reduce the amount of HIV in your blood. This is called your “viral load”.
- Increase the number of white blood cells called CD4+ (T) cells that help fight off other infections.



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Reducing the amount of HIV and increasing the CD4+ (T) cell count may improve your immune system. This may reduce your risk of death or infections that can happen when your immune system is weak (opportunistic infections).

**COMPLERA does not cure HIV infections or AIDS.**

- Always practice safer sex.
- Use latex or polyurethane condoms to lower the chance of sexual contact with any body fluids such as semen, vaginal secretions, or blood.
- Never re-use or share needles.

Ask your healthcare provider if you have any questions about how to prevent passing HIV to other people.

**Who should not take COMPLERA?**

- Do not take COMPLERA if your HIV infection has been previously treated with HIV medicines.
- **Do not take COMPLERA if you are taking certain other medicines.** For more information about medicines that **must not** be taken with COMPLERA, see "**What should I tell my healthcare provider before taking COMPLERA?**"

**What should I tell my healthcare provider before taking COMPLERA?**

**Before you take COMPLERA, tell your healthcare provider if you:**

- have liver problems, including hepatitis B or C virus infection
- have kidney problems
- have ever had a mental health problem
- have bone problems
- are pregnant or plan to become pregnant. It is not known if COMPLERA can harm your unborn child.

  **Pregnancy Registry.** There is a pregnancy registry for women who take antiviral medicines during pregnancy. Its purpose is to collect information about the health of you and your baby. Talk to your healthcare provider about how you can take part in this registry.
- are breast-feeding or plan to breast-feed. The Centers for Disease Control and Prevention recommends that mothers with HIV not breastfeed because they can pass the HIV through their milk to the baby. It is not known if COMPLERA can pass through your breast milk and harm your baby. Talk to your healthcare provider about the best way to feed your baby.

**Tell your healthcare provider about all the medicines you take**, including prescription and nonprescription medicines, vitamins, and herbal supplements.

**COMPLERA may affect the way other medicines work, and other medicines may affect how COMPLERA works, and may cause serious side effects.** If you take certain medicines with COMPLERA, the amount of COMPLERA in your body may be



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too low and it may not work to help control your HIV infection. The HIV virus in your body may become resistant to COMPLERA or other HIV medicines that are like it.

**Do not take COMPLERA if you also take these medicines:**

- COMPLERA provides a complete treatment for HIV infection. Do not take other HIV medicines with COMPLERA.
- the anti-seizure medicines carbamazepine (CARBATROL®, EQUETRO®, TEGRETOL®, TEGRETOL- XR®, TERIL®, EPITOL®), oxcarbazepine (TRILEPTAL®), phenobarbital (LUMINAL®), phenytoin (DILANTIN®, DILANTIN-125®, PHENYTEK®)
- the anti-tuberculosis medicines rifabutin (MYCOBUTIN®), rifampin (RIFATER®, RIFAMATE®, RIMACTANE®, RIFADIN®) and rifapentine (PRIFTIN®)
- a proton pump inhibitor medicine for certain stomach or intestinal problems, including esomeprazole (NEXIUM®, VIMOVO®), lansoprazole (PREVACID®), omeprazole (PRILOSEC®), pantoprazole sodium (PROTONIX®), rabeprazole (ACIPHEX®)
- more than 1 dose of the steroid medicine dexamethasone or dexamethasone sodium phosphate
- St. John's wort (*Hypericum perforatum*)

**If you are taking COMPLERA, you should not take:**

- other medicines that contain tenofovir (VIREAD®, TRUVADA®, ATRIPLA®)
- other medicines that contain emtricitabine or lamivudine (EMTRIVA®, COMBIVIR®, EPIVIR® or EPIVIR-HBV®, EPZICOM®, TRIZIVIR®)
- rilpivirine (EDURANT™)
- adefovir (HEPSERA®)

**Also tell your healthcare provider if you take:**

- an antacid medicine that contains aluminum, magnesium hydroxide, or calcium carbonate. Take antacids at least 2 hours before or at least 4 hours after you take COMPLERA.
- a histamine-2 blocker medicine, including famotidine (PEPCID®), cimetidine (TAGAMET®), nizatidine (AXID®), or ranitidine hydrochloride (ZANTAC®). Take these medicines at least 12 hours before or at least 4 hours after you take COMPLERA.
- the antibiotic medicines clarithromycin (BIAXIN®), erythromycin (E-MYCIN®, ERYC®, ERY-TAB®, PCE®, PEDIAZOLE®, ILOSON®), and troleandomycin (TAO®)
- an antifungal medicine by mouth, including fluconazole (DIFLUCAN®), itraconazole (SPORANOX®), ketoconazole (NIZORAL®), posaconazole (NOXAFIL®), voriconazole (VFEND®)
- methadone (DOLOPHINE®)



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**Ask your healthcare provider or pharmacist if you are not sure if your medicine is one that is listed above.**

**Know the medicines you take. Keep a list of your medicines and show it to your healthcare provider and pharmacist when you get a new medicine.** Your healthcare provider and your pharmacist can tell you if you can take these medicines with COMPLERA. Do not start any new medicines while you are taking COMPLERA without first talking with your healthcare provider or pharmacist. You can ask your healthcare provider or pharmacist for a list of medicines that can interact with COMPLERA.

**How should I take COMPLERA?**

- **Stay under the care of your healthcare provider during treatment with COMPLERA.**
- **Take COMPLERA exactly as your healthcare provider tells you to take it.**
- **Always take COMPLERA with a meal.** Taking COMPLERA with a meal is important to help get the right amount of medicine in your body. A protein drink does not replace a meal.
- Do not change your dose or stop taking COMPLERA without first talking with your healthcare provider. See your healthcare provider regularly while taking COMPLERA.
- If you miss a dose of COMPLERA within 12 hours of the time you usually take it, take your dose of COMPLERA **with a meal** as soon as possible. Then, take your next dose of COMPLERA at the regularly scheduled time. If you miss a dose of COMPLERA by more than 12 hours of the time you usually take it, wait and then take the next dose of COMPLERA at the regularly scheduled time.
- Do not take more than your prescribed dose to make up for a missed dose.
- When your COMPLERA supply starts to run low, get more from your healthcare provider or pharmacy. It is very important not to run out of COMPLERA. The amount of virus in your blood may increase if the medicine is stopped for even a short time.
- If you take too much COMPLERA, contact your local poison control center or go to the nearest hospital emergency room right away.

**What are the possible side effects of COMPLERA?**

**COMPLERA may cause the following serious side effects, including**:

- **See "What is the most important information I should know about COMPLERA?"**
- **New or worse kidney problems** can happen in some people who take COMPLERA. If you have had kidney problems in the past or take other medicines that can cause kidney problems, your healthcare provider may need to do blood tests to check your kidneys during your treatment with COMPLERA.



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- **Depression or mood changes. Tell your healthcare provider right away if you have any of the following symptoms:**
    - feeling sad or hopeless
    - feeling anxious or restless
    - have thoughts of hurting yourself (suicide) or have tried to hurt yourself
- **Bone problems** can happen in some people who take COMPLERA. Bone problems include bone pain, softening or thinning (which may lead to fractures). Your healthcare provider may need to do additional tests to check your bones.
- **Changes in body fat** can happen in people taking HIV medicine. These changes may include increased amount of fat in the upper back and neck ("buffalo hump"), breast, and around the main part of your body (trunk). Loss of fat from the legs, arms and face may also happen. The cause and long term health effect of these conditions are not known.
- **Changes in your immune system (Immune Reconstitution Syndrome)** can happen when you start taking HIV medicines. Your immune system may get stronger and begin to fight infections that have been hidden in your body for a long time. Tell your healthcare provider if you start having new symptoms after starting your HIV medicine.

The most common side effects of COMPLERA include:

- trouble sleeping (insomnia)
- abnormal dreams
- headache
- dizziness
- diarrhea
- nausea
- rash
- tiredness
- depression

Additional common side effects include:

- vomiting
- stomach pain or discomfort
- skin discoloration (small spots or freckles)
- pain

Tell your healthcare provider if you have any side effect that bothers you or that does not go away.



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These are not all the possible side effects of COMPLERA. For more information, ask your healthcare provider or pharmacist.

Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088 (1-800-332-1088).

**How do I store COMPLERA?**

- Store COMPLERA at room temperature 77 °F (25 °C).
- Keep COMPLERA in its original container and keep the container tightly closed.
- Do not use COMPLERA if the seal over the bottle opening is broken or missing.

**Keep COMPLERA and all other medicines out of reach of children.**

**General information about COMPLERA:**

Medicines are sometimes prescribed for purposes other than those listed in a Patient Information leaflet. Do not use COMPLERA for a condition for which it was not prescribed. Do not give COMPLERA to other people, even if they have the same symptoms you have. It may harm them.

This leaflet summarizes the most important information about COMPLERA. If you would like more information, talk with your healthcare provider. You can ask your healthcare provider or pharmacist for information about COMPLERA that is written for health professionals. For more information, call (1-800-445-3235) or go to www.COMPLERA.com.

**What are the ingredients of COMPLERA?**

**Active ingredients:** emtricitabine, rilpivirine hydrochloride, and tenofovir disoproxil fumarate

**Inactive ingredients:** pregelatinized starch, lactose monohydrate, microcrystalline cellulose, croscarmellose sodium, magnesium stearate, povidone, polysorbate 20. The tablet film coating contains polyethylene glycol, hypromellose, lactose monohydrate, triacetin, titanium dioxide, iron oxide red, FD&C Blue #2 aluminum lake, FD&C Yellow #6 aluminum lake.

This Patient Information has been approved by the U.S. Food and Drug Administration

Manufactured and distributed by:

Gilead Sciences, Inc.

Foster City, CA 94404

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