Fosamprenavir

Brand Name: Lexiva
Drug Class: Protease Inhibitors

Drug Description

Fosamprenavir is the calcium phosphate ester prodrug of amprenavir, an inhibitor of HIV protease. Fosamprenavir calcium is a single stereoisomer with the (3S)(1S,2R) configuration. [1]

HIV/AIDS-Related Uses

Fosamprenavir in tablet form was approved by the FDA on October 20, 2003, for the treatment of HIV-1 infection in combination with other antiretroviral medications. Fosamprenavir in oral suspension form was approved by the FDA on June 14, 2007, for use in HIV-infected adults or children 2 to 18 years old.[2]

Pharmacology

Fosamprenavir is rapidly and almost completely hydrolyzed to amprenavir and inorganic phosphate by cellular phosphatases in the gut epithelium as it is absorbed. Amprenavir binds to the active site of HIV-1 protease and prevents the processing of viral Gag and Gag-Pol polyprotein precursors, resulting in the formation of immature, noninfectious viral particles.[3]

Fosamprenavir has been studied in both healthy adult volunteers and HIV-infected patients; no substantial differences in steady-state amprenavir concentrations were observed between the two populations. The time to peak amprenavir concentration (Tmax) after administration of a single dose of fosamprenavir occurred between 1.5 and 4 hours (median, 2.5 hours). The absolute oral bioavailability of amprenavir after administration of fosamprenavir has not been established. [4]

In a fasted state, administration of single, 1,400-mg doses using the fosamprenavir 50 mg/ml suspension and of the 700 mg tablet provided similar amprenavir area under the concentration-time curve (AUC) exposures, although the maximum plasma concentration (Cmax) of amprenavir increased 14.5% with administration of the suspension compared with the tablet.[5]

When administered twice daily with ritonavir, the median Cmax was 6.08 mcg/ml, the median Tmax was 1.5 hours, and the median AUC was 79.2 mcg hour/ml.[6]

In vitro, amprenavir is approximately 90% bound to plasma proteins, with concentration-dependent binding observed over the concentration range of 1 to 10 mcg/ml. Fosamprenavir primarily binds to alpha1-acid glycoprotein. Higher amounts of unbound amprenavir present as amprenavir serum concentrations increase. The partitioning of amprenavir into erythrocytes is low but increases as amprenavir concentrations increase, reflecting the higher amount of unbound drug at higher concentrations.[7]

Amprenavir is metabolized in the liver by the cytochrome P450 (CYP) 3A4 enzyme system. The two major metabolites result from the oxidation of the tetrahydrofuran and aniline moieties. The plasma elimination half-life of amprenavir is approximately 7.7 hours. Excretion of unchanged amprenavir in the urine and feces is minimal.[8]

Two open-label studies were conducted in pediatric patients 2 to 18 years old. The first study evaluated fosamprenavir twice daily with or without ritonavir in combination with other antiretroviral agents. Eighteen patients (including two treatment-experienced patients) received fosamprenavir suspension alone, and 57 patients (including 30 PI-experienced patients) received fosamprenavir suspension or tablets combined with ritonavir twice daily. At Week 24, 67% of patients receiving fosamprenavir alone achieved viral load levels less than 400 copies/ml. In the ritonavir arm at Week 24, 57% of the PI-experienced patients and 70% of the remaining patients achieved viral load levels less than 400 copies/ml.[9]

The second study evaluated once-daily fosamprenavir with ritonavir and determined that there are insufficient data to support once-daily dosing in any pediatric population.[10]

Fosamprenavir is in FDA Pregnancy Category C. It is not known whether amprenavir crosses the human placenta; however, it does cross the placenta in rats.[11] There are no adequate and

Fosamprenavir

Pharmacology (cont.)

well-controlled studies to date using the drug in pregnant women. Fosamprenavir should be used during pregnancy only when clearly needed. An Antiretroviral Pregnancy Registry has been established to monitor the outcomes of pregnant women exposed to antiretroviral agents, including fosamprenavir. Physicians may register patients by calling 1-800-258-4263 or online at: http://www.APRegistry.com. It is not known whether amprenavir is distributed into human milk; however, it is distributed into milk in rats. Because of both the potential for HIV transmission and for serious adverse reactions in nursing infants, women should be instructed not to breastfeed if they are taking fosamprenavir.[12]

HIV-1 isolates with a decreased susceptibility to amprenavir have been selected in vitro and obtained from patients treated with fosamprenavir. Amprenavir resistance-associated mutations at positions I54L/M, V32I, I47V, and M46I have been detected in HIV isolates from antiretroviral-naive patients treated with fosamprenavir. No such mutations were detected in one clinical study of antiretroviral-naive patients treated with fosamprenavir/ritonavir.[13]

Adverse Events/Toxicity

The most common adverse effects associated with fosamprenavir use include hypertriglyceridemia, skin rash, depressive or mood disorders, hyperglycemia, nausea, abdominal pain, diarrhea, fatigue, headache, and vomiting.[14] Vomiting appears more common in pediatric patients than in adults.[15]

In clinical studies, 19% of patients treated with fosamprenavir developed skin rash. Most rashes were of mild to moderate intensity; fewer than 1% of patients receiving fosamprenavir developed a severe or life-threatening rash (Grade 3 or 4), including Stevens-Johnson syndrome. Fosamprenavir should be discontinued in patients with severe or life-threatening rash or with moderate rash accompanied by systemic reactions.[16]

There have been reports of spontaneous bleeding in patients with hemophilia A and B treated with protease inhibitors (PIs). In some patients additional factor VIII was required. In many of the reported cases, treatment with PIs was continued or restarted. A causal relationship between PI therapy and these episodes has not been established.[17]

Immune reconstitution syndrome has been reported in patients treated with combination antiretroviral therapy, including fosamprenavir. During the initial phase of combination antiretroviral treatment, a patient whose immune system improves may develop an inflammatory response to indolent or residual opportunistic infections, such as Mycobacterium avium infection, cytomegalovirus infections, Pneumocystis jirovecii pneumonia, or tuberculosis. Symptoms of immune reconstitution syndrome necessitate further evaluation and treatment.[18]

Redistribution of body fat, peripheral wasting, facial wasting, breast enlargement, and cushingoid appearance have been observed in patients receiving antiretroviral therapy.[19]

Treatment with amprenavir alone or in combination with ritonavir has resulted in increases in the concentration of total cholesterol and triglycerides. Cholesterol and triglyceride testing should be performed prior to initiation of amprenavir therapy and at periodic intervals during treatment. Lipid disorders should be managed as clinically appropriate.[20]

Drug and Food Interactions

Fosamprenavir tablets may be taken with or without food.[21] Administration of a single, 1,400 mg dose of fosamprenavir oral suspension with a high-fat meal decreased the Cmax by 46% and decreased the amprenavir AUC by 28%.[22] Fosamprenavir oral suspension should be taken without food by adults but with food by children 2 to 18 years old.[23]

Concomitant use of fosamprenavir with certain drugs that are highly dependent on CYP3A4 for clearance may raise the plasma levels of these drugs, potentially resulting in serious or life-threatening events. Drugs that are contraindicated with amprenavir include bepridil,

Fosamprenavir

Drug and Food Interactions (cont.)

cisapride, dihydroergotamine, ergonovine, ergotamine, methylergonovine, midazolam, pimozide, and triazolam. Rifampin is a potent inducer of CYP3A4 and can markedly reduce plasma concentrations of fosamprenavir. If fosamprenavir is coadministered with ritonavir, flecainide and propafenone are also contraindicated.[24]

Fosamprenavir should not be coadministered with delavirdine, because it may lead to loss of virologic response and possible resistance to delavirdine. Concurrent use of efavirenz or nevirapine with fosamprenavir may decrease amprenavir concentration.[25] Decreased concentrations of fosamprenavir were observed when fosamprenavir and saquinavir were taken concurrently; the effect of fosamprenavir on saquinavir has not yet been established.[26]

Concurrent use of phenytoin with fosamprenavir may increase amprenavir concentration and decrease phenytoin concentration. Plasma phenytoin concentrations should be monitored and dose should be increased as is appropriate. No change in fosamprenavir dose is recommended.[27]

Concurrent use of paroxetine with fosamprenavir may decrease paroxetine concentration. Paroxetine dose adjustment should be guided by tolerability and efficacy.[28]

Concomitant use of products containing St. John's wort (Hypericum perforatum) with fosamprenavir or other PIs is not recommended. St. John's wort is expected to substantially decrease drug plasma levels and may lead to loss of virologic response and possible resistance to fosamprenavir or other PIs.[29]

Serious or life-threatening events can occur if amprenavir is taken with amiodarone, bepredil, lidocaine, tricyclic antidepressants, and quinidine. Patients receiving amprenavir concomitantly with any of these drugs should be carefully monitored.[30]

Caution should be used when prescribing sildenafil or vardenafil in patients receiving PIs, including fosamprenavir. Coadministration of a PI with sildenafil, tadalafil, or vardenafil is expected to substantially increase sildenafil, tadalafil and vardenafil plasma concentrations and, possibly, sildenafil-associated adverse effects, including hypotension, visual changes, and priapism.[31]

Concomitant use of fosamprenavir with certain other drugs may significantly increase or decrease plasma concentrations of amprenavir or of the coadministered drug. Adjustment in dosage or regimen should be considered when amprenavir is coadministered with antacids, ketoconazole, itraconazole, and rifabutin.[32]

Concomitant use of fosamprenavir and oral or other contraceptives containing ethinyl estradiol/norethindrone may lead to loss of virologic response. Alternative methods of nonhormonal contraception are recommended.[33]

Fosamprenavir is a sulfonamide. The potential for cross-sensitivity between other sulfonamides and amprenavir is unknown. Amprenavir should be used with caution in patients with a known sulfonamide allergy.[34]

Fosamprenavir may increase serum concentrations of warfarin when these two drugs are taken together.[35]

Contraindications

Fosamprenavir is contraindicated in patients with previously demonstrated clinically significant hypersensitivity to amprenavir.[36]

Fosamprenavir should be used with caution in patients with a known sulfonamide allergy. Fosamprenavir contains a sulfonamide moiety. The potential for cross-sensitivity between drugs in the sulfonamide class and fosamprenavir is unknown.[37]

Clinical Trials

For information on clinical trials that involve Fosamprenavir, visit the ClinicalTrials.gov web site at http://www.clinicaltrials.gov. In the Search box, enter: Fosamprenavir AND HIV Infections.

Fosamprenavir

Dosing Information

Mode of Delivery: Oral.[38]

Dosage Form: Tablets containing fosamprenavir 700 mg.[39]

Suspension containing fosamprenavir 50 mg/ml as fosamprenavir calcium, equivalent to approximately 43 mg/ml amprenavir.[40] Suspension provided in a 225-ml bottle that should be shaken vigorously before each use.[41]

The recommended dose of fosamprenavir for treatment-naive adult patients is either 1) 1,400 mg twice daily without ritonavir, 2) 1,400 mg once daily plus ritonavir 200 mg once daily, or 3) 700 mg twice daily plus ritonavir 100 mg twice daily. The recommended dose of fosamprenavir for protease inhibitor (PI)-experienced adult patients is 700 mg twice daily plus ritonavir 100 mg twice daily. An additional 100 mg/day of ritonavir is recommended when efavirenz is administered with fosamprenavir/ritonavir once daily.[42]

Pediatric doses for patients 2 to 18 years old should be calculated based on body weight (kg) and should not exceed the adult dose.[43] Fosamprenavir tablets 1,400 mg twice daily may be used alone in pediatric patients weighing at least 47 kg; fosamprenavir tablets may be used in combination with ritonavir in pediatric patients weighing at least 39 kg.[44]

Based on two open-label studies in pediatric patients, fosamprenavir should not be administered once daily, alone or with ritonavir, to pediatric patients 2 to 18 years old or at any dosage to treatment-experienced patients 2 to 5 years old.[45]

Fosamprenavir oral suspension 30 mg/kg, up to a maximum of 1,400 mg, should be administered twice daily in treatment-naive patients 2 to 5 years old. Treatment-naive patients age 6 years or older should receive either 30 mg/kg (up to 1,400 mg) twice daily or 18 mg/kg (up to 700 mg) twice daily plus ritonavir 3 mg/kg (up to 100 mg) twice daily. Treatment-experienced patients age 6 years or older should receive fosamprenavir 18 mg/kg twice daily plus ritonavir 3 mg/kg twice daily (up to a maximum of fosamprenavir 700 mg and ritonavir 100 mg).[46]

If vomiting occurs within 30 minutes after dosing of the oral suspension, repeat dosing is recommended.[47]

Fosamprenavir should be used with caution in all patients with hepatic impairment. In treatment-naive patients with mild hepatic impairment (Child-Pugh score of 5 to 6), a reduced fosamprenavir dosage of 700 mg twice daily alone or with ritonavir 100 mg once daily is recommended. PI-experienced patients with mild impairment should receive a fosamprenavir dosage of 700 mg twice daily combined with ritonavir 100 mg once daily.[48]

In treatment-naive patients with moderate hepatic impairment (Child-Pugh score of 7 to 9), a reduced fosamprenavir dosage of 700 mg twice daily without ritonavir or 450 mg twice daily combined with ritonavir 100 mg once daily is recommended. PI-experienced patients with moderate impairment should receive fosamprenavir 450 mg twice daily combined with ritonavir 100 mg once daily.[49]

In treatment-naive patients with severe hepatic impairment (Child-Pugh score of 10 to 12), a reduced fosamprenavir dosage of 350 mg twice daily without ritonavir is recommended. No data exists to support use of fosamprenavir combined with ritonavir in patients with severe hepatic impairment.[50]

Storage: Store tablets at 25 C (77 F); excursions permitted to 15 C to 30 C (59 F to 86 F).[51]

Store suspension at 5 C to 30 C (40 F to 86 F). Do not freeze; refrigeration is allowed to improve the taste. Shake vigorously before each use.[52]

Chemistry

CAS Name: Carbamic acid, [(1S,2R)-3-[[(4-aminophenyl)sulfonyl](2-methylpropyl)amino]-1-(phenylmethyl)-2-(phosphonooxy)propyl]-, C-[(3S)-tetrahydro-3-furanyl] ester, calcium salt[53]

CAS Number: 226700-81-8[54]

Molecular formula: C25-H34-Ca-N3-O9-P-S[55]

Fosamprenavir

Chemistry (cont.)

C48.2%, H5.5%, N6.7%, O23.1%, P5.0%, S5.1%, Ca6.4%[56]

Molecular weight: 623.64[57]

Melting point: 282 to 284 C[58]

Physical Description: Tablets: pink, film-coated, capsule-shaped, biconvex tablets with "GX LL7" debossed on one face.[59]

Suspension: white to off-white suspension.[60]

Solubility: 0.31 mg/ml in water at 25 C.[61]

Other Names

GW433908[62]

f-APV[63]

Fosamprenavir calcium[64]

GW 433908[65]

VX 175[66]

Telzir[67]

Further Reading

Arvieux C, Tribut O. Amprenavir or fosamprenavir plus ritonavir in HIV infection: pharmacology, efficacy and tolerability profile. Drugs. 2005;65(5):633-59. Review.

Chapman TM, Plosker GL, Perry CM. Fosamprenavir: a review of its use in the management of antiretroviral therapy-naive patients with HIV infection. Drugs. 2004;64(18):2101-24. Review.

Vierling P, Greiner J. Prodrugs of HIV protease inhibitors. Curr Pharm Des 2003;9(22):1755-70.

Wire MB, Shelton MJ, Studenberg S. Fosamprenavir : clinical pharmacokinetics and drug interactions of the amprenavir prodrug. Clin Pharmacokinet. 2006;45(2):137-68.

Manufacturer Information

Fosamprenavir
GlaxoSmithKline
5 Moore Drive
Research Triangle Park, NC 27709
(888) 825-5249

Fosamprenavir
Vertex Pharmaceuticals Inc
130 Waverly Street
Cambridge, MA 02139-4242
(617) 577-6000

Lexiva
GlaxoSmithKline
5 Moore Drive
Research Triangle Park, NC 27709
(888) 825-5249

For More Information

Contact your doctor or an AIDSinfo Health Information Specialist:

• Via Phone: 1-800-448-0440 Monday - Friday, 12:00 p.m. (Noon) - 5:00 p.m. ET

• Via Live Help: http://aidsinfo.nih.gov/live_help Monday - Friday, 12:00 p.m. (Noon) - 4:00 p.m. ET

Fosamprenavir

References

1. FDA - Lexiva Prescribing Information, 03/05/08, p. 18. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

2. FDA - Drugs Used in the Treatment of HIV Infection. Available at: http://www.fda.gov/oashi/aids/virals.html. Accessed 05/27/08.

3. FDA - Lexiva Prescribing Information, 03/05/08, p. 32. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

4. FDA - Lexiva Prescribing Information, 03/05/08, pp. 19, 21. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

5. FDA - Lexiva Prescribing Information, 03/05/08, p. 21. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

6. FDA - Lexiva Prescribing Information, 03/05/08, p. 20. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

7. FDA - Lexiva Prescribing Information, 03/05/08, p. 21. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

8. FDA - Lexiva Prescribing Information, 03/05/08, p. 21. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

9. FDA - Lexiva Prescribing Information, 03/05/08, p. 37. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

10. FDA - Lexiva Prescribing Information, 03/05/08, p. 38. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

11. Wolters Kluwer Health, Inc. - Fosamprenavir, Facts and Comparisons 4.0. Available at: http://online.factsandcomparisons.com. Accessed 05/27/08.

12. FDA - Lexiva Prescribing Information, 03/05/08, p. 17. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

13. FDA - Lexiva Prescribing Information, 03/05/08, pp. 32-3. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

14. Pharm GKB - Fosamprenavir Prescribing Information. Available at: http://www.pharmgkb.org. Accessed 05/27/08.

15. FDA - Lexiva Prescribing Information, 03/05/08, p. 10. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

16. FDA - Lexiva Prescribing Information, 03/05/08, pp. 5, 8. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

17. FDA - Lexiva Prescribing Information, 03/05/08, p. 6. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

18. FDA - Lexiva Prescribing Information, 03/05/08, pp. 5-6. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

19. FDA - Lexiva Prescribing Information, 03/05/08, p. 6. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

20. FDA - Lexiva Prescribing Information, 03/05/08, p. 6. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

21. FDA - Lexiva Prescribing Information, 03/05/08, p. 2. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

22. FDA - Lexiva Prescribing Information, 03/05/08, p. 21. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

23. FDA - Lexiva Prescribing Information, 03/05/08, p. 2. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

24. Wolters Kluwer Health, Inc. - Fosamprenavir, Facts and Comparisons 4.0. Available at: http://online.factsandcomparisons.com. Accessed 05/27/08.

25. Wolters Kluwer Health, Inc. - Fosamprenavir, Facts and Comparisons 4.0. Available at: http://online.factsandcomparisons.com. Accessed 05/27/08.

26. Wolters Kluwer Health, Inc. - Fosamprenavir, Facts and Comparisons 4.0. Available at: http://online.factsandcomparisons.com. Accessed 05/27/08.

27. FDA - Lexiva Prescribing Information, 03/05/08, p. 13. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

28. FDA - Lexiva Prescribing Information, 03/05/08, p. 13. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

29. Wolters Kluwer Health, Inc. - Fosamprenavir, Facts and Comparisons 4.0. Available at: http://online.factsandcomparisons.com. Accessed 05/27/08.

30. Wolters Kluwer Health, Inc. - Fosamprenavir, Facts and Comparisons 4.0. Available at: http://online.factsandcomparisons.com. Accessed 05/27/08.

31. Wolters Kluwer Health, Inc. - Fosamprenavir, Facts and Comparisons 4.0. Available at: http://online.factsandcomparisons.com. Accessed 05/27/08.

32. Wolters Kluwer Health, Inc. - Fosamprenavir, Facts and Comparisons 4.0. Available at: http://online.factsandcomparisons.com. Accessed 05/27/08.

33. Wolters Kluwer Health, Inc. - Fosamprenavir, Facts and Comparisons 4.0. Available at: http://online.factsandcomparisons.com. Accessed 05/27/08.

34. Wolters Kluwer Health, Inc. - Fosamprenavir, Facts and Comparisons 4.0. Available at: http://online.factsandcomparisons.com. Accessed 05/27/08.

35. Wolters Kluwer Health, Inc. - Fosamprenavir, Facts and Comparisons 4.0. Available at: http://online.factsandcomparisons.com. Accessed 05/27/08.

36. FDA - Lexiva Prescribing Information, 03/05/08, p. 3. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

37. FDA - Lexiva Prescribing Information, 03/05/08, p. 5. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

38. AHFS Drug Information - 2008; p. 648

39. AHFS Drug Information - 2008; p. 648

40. FDA - Lexiva Prescribing Information, 03/05/08, p. 38. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

41. FDA - Lexiva Prescribing Information, 03/05/08, p. 2. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

42. FDA - Lexiva Prescribing Information, 03/05/08, p. 2. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

43. FDA - Lexiva Prescribing Information, 03/05/08, p. 2. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

44. FDA - Lexiva Prescribing Information, 03/05/08, p. 3. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

45. FDA - Lexiva Prescribing Information, 03/05/08, p. 2. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

46. FDA - Lexiva Prescribing Information, 03/05/08, p. 3. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

47. FDA - Lexiva Prescribing Information, 03/05/08, p. 43. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

48. FDA - Lexiva Prescribing Information, 03/05/08, p. 3. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

49. FDA - Lexiva Prescribing Information, 03/05/08, p. 3. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

50. FDA - Lexiva Prescribing Information, 03/05/08, p. 3. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

51. FDA - Lexiva Prescribing Information, 03/05/08, p. 38. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

52. FDA - Lexiva Prescribing Information, 03/05/08, p. 38. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

53. ChemIDplus - Available at: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp. Accessed 05/27/08.

54. ChemIDplus - Available at: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp. Accessed 05/27/08.

55. ChemIDplus - Available at: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp. Accessed 05/27/08.

56. Calculation. -

57. Merck Index - 2006; p. 729

58. Merck Index - 2006; p. 729

59. FDA - Lexiva Prescribing Information, 03/05/08, p. 3. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

60. FDA - Lexiva Prescribing Information, 03/05/08, p. 3. Available at: http://www.fda.gov/cder/foi/label/2008/021548s017, 022116s001lbl.pdf. Accessed 05/27/08.

61. Merck Index - 2006; p. 729

62. ChemIDplus - Available at: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp. Accessed 05/27/08.

63. Guidelines for the Use of Antiretroviral Agents in Pediatric HIV Infection - MMWR 2002;51 (No.RR-7) Updated as a Living Document on February 28, 2008. Available at: http://aidsinfo.nih.gov/contentfiles/PediatricGuidelines.pdf. Accessed 05/27/08.

64. MeSH - Fosamprenavir. Available at http://www.nlm.nih.gov/mesh/2007/MBrowser.html. Accessed 05/27/08.

65. ChemIDplus - Available at: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp. Accessed 05/27/08.

66. ChemIDplus - Available at: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp. Accessed 05/27/08.

67. ChemIDplus - Available at: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp. Accessed 05/27/08.