UNIVERSITY OF PENNSYLVANIA HEALTH SYSTEM

Merck Sharp & Dohme Corp., a subsidiary of Merck & Co. Inc. MK-1439-007, Amendment 7 10/17/12

Multicenter, Double-Blind, Randomized, 2-Part, Dose Ranging Study to Compare the Safety, and Antiretroviral Activity of MK-1439 Plus TRUVADA™ Versus Efavirenz Plus TRUVADA™ in Antiretroviral Treatment-Naïve, HIV-1 Infected Patients

CONSENT TO PARTICIPATE IN A RESEARCH STUDY AND RESEARCH SUBJECT HIPAA AUTHORIZATION

Your contacts for this study at the Hospital of the University of Pennsylvania [HUP] are:

Site address: 502 Johnson Pavilion, Philadelphia, PA 19104

Principal Investigator:	Pablo Tebas, MD	(215) 349-8092
Manager:	Joseph Quinn, RN, BSN	(215) 349-8092
Study Nurses:	Jenna Lewis, RN, BSN	(215) 349-8092

24 Hour Emergency Number (215) 662-6059 Ask for the Immunodeficiency Program Doctor on call

INTRODUCTION

You are being invited to take part in a research study. This consent form has information to help you decide if you want to participate. Take your time, read this form carefully, and ask the study doctor or staff any questions you may have. You should not sign this form until you understand all of the information presented in the following pages and until all of your questions about the research have been answered to your satisfaction. If you agree to volunteer, you will be asked to sign and date this consent form. You will be given a copy of the signed and dated consent form to keep.

No one can force you to take part in this study. Even if you agree to participate now, you are free to change your mind. You may stop at any time without penalty or loss of benefits which you would otherwise have.

Before you agree to volunteer, you must understand the purpose of the study, how your participation may help you, any potential risks to you, and what is expected of you during the study.

The study doctor will be paid by the Sponsor, Merck Sharp & Dohme Corp., for conducting this study.

PURPOSE OF THE STUDY

The purpose of this study is to:

- test the safety and tolerability of the research study drug, MK-1439, compared with efavirenz, each given with TRUVADA™;
- evaluate the antiviral activity (ability to suppress human immunodeficiency virus [HIV]) and immunological effect (effect on immune system) of MK-1439 compared with efavirenz, each given with TRUVADA™;
- measure how the body processes MK-1439 when given with TRUVADA™;
- assess the development of resistance to MK-1439 when given with TRUVADA™ in patients who do not respond to treatment.

This is a research study to test a drug (MK-1439) that has not yet been approved for sale. MK-1439 and efavirenz belong to the class of medications known as non-nucleoside reverse transcriptase inhibitors (NNRTIs), and TRUVADA™ belongs to the class of medications known as nucleoside/nucelotide reverse transcriptase inhibitors (NRTIs). Both efavirenz and TRUVADA™ are medications prescribed for the treatment of HIV infection. This is a 2-part study (Part I and Part II).

The study will enroll patients in 2 stages: Part I, (which will study 4 doses of MK-1439 to select a dose for further study) or Part II. If you enter during Part I, then you will receive either MK-1439 (at one of four doses) or EFV, with 80% likelihood of receiving MK-1439 and 20% of receiving EFV. After MK-1439 dose

selection, if you are receiving MK-1439 it will be changed to the selected MK-1439 dose (still considered to be Part I). If you are receiving EFV, you will continue the EFV at the same dose (still considered to be Part I).

If you enter the study in Part II, you will receive either MK-1439 at the selected dose (as determined from Part I) or EFV for the entire study.

You will participate in only one part (Part I or Part II) of this study.

There may be reasons why you are not allowed to take part in this study. Some of these reasons include:

- Your CD4 count is <100 cells/mm^3 at screening (CD4 is a type of white blood cell).
- You are a male patient planning to get a female pregnant or provide a sperm donation OR you are female patient who is pregnant or breast-feeding, or expecting to get pregnant or donate eggs during your study participation through an additional 12 weeks after completing the study.
- You received any approved or experimental (i.e., not approved for sale for the condition being studied) antiretroviral agents (medication that prevents a virus like HIV from replicating) or anticipate to receive such medications during the study except as allowed by the study protocol.
- You used any immunomodulators (medications that affect the immune system) or immunosuppressive therapy (medications that suppress the immune system) within 1 month prior to treatment in this study. Short treatments with corticosteroids (e.g., as for asthma exacerbation) will be allowed.
- You require or are anticipated to require any medications not allowed by the study protocol. Your study doctor or his/her staff can discuss these with you.
- You have been treated for a viral infection (virus) other than HIV, such as hepatitis B, with a medication that is active against HIV.
- You have a significant hypersensitivity (allergic reaction) or other contraindication (reason not to give a medication) to any of the components of the study drugs.
- Your virus has documented or known HIV resistance to any of the components of the study drugs.
- You have a history of renal (kidney) or urinary obstructive disease, require dialysis, or have a creatinine clearance level (which measures renal function) below a certain value.
- You have an active hepatitis C (HCV) or hepatitis B (HBV) infection.
- You have a history of alcohol or other substance abuse which in the opinion of the study doctor would interfere with your compliance or safety.
- You have any condition or prestudy laboratory abnormality, or history of any illness, which, in the opinion of the study doctor, might confound the results of the study or pose additional safety concerns in administering the study drugs to you.
- You have participated in a study with an experimental drug or device within 1 month of signing informed consent or are planning to participate in a study with an experimental drug or device during the current study.

The study doctor or his/her staff will discuss these and any other reasons why you may not be allowed to enter the study.

STUDY SIZE

About 320 people will be in the study (about 200 patients in Part I and about 120 in Part II). At Penn, about 5-7 people are expected to participate.

DURATION OF THE STUDY

You will be in the study for about 2 years, including a screening period, 96 weeks of treatment, and a follow-up visit about 14 days after stopping treatment.

STUDY DESIGN

If you take part in the study, you will need to do the following:

- Visit the study doctor about 15 times. If you are eligible to participate in the study following the screening visit (Visit 1), you will return to the study site for visits on Day 1 (Visit 2), and at Weeks 2, 4, 8, 12, 16, 24, 36, 48, 60, 72, 84, and 96 (Visits 3 to 14), and 14 days after you complete study treatment (Visit 15). You may also need to return to the study site for an unscheduled visit if you discontinue the study early or if you are not responding to treatment.
- If you are of reproductive potential (i.e., able to have a baby or impregnate), agree to true abstinence (i.e., not have sex) or use (or have your partner use) 2 acceptable methods of birth control throughout the study and for 12 weeks after completing the study. Any patient who becomes pregnant during the study must be discontinued from all study drugs. Patients who become pregnant will be asked to join a pregnancy registry which collects information about the outcome of the pregnancy.
- Fast (nothing to eat or drink) for at least 8 hours prior to Visit 2 (Day 1), Visit 6 (Week 12), Visit 8 (Week 24), Visit 10 (Week 48), Visit 14 (Week 96), or Early Discontinuation Visit and prior to the 14-day post therapy follow-up visit.
- Stay at the study site for blood samples that will be taken predose and approximately 2 hours after you take your study drug at Visit 4 (Week 4) and Visit 6 (Week 12).
- Inform the study doctor about any medications or other treatments (including herbal medication) taken within 14 days of the start of the study or during the study.
- Carry an emergency contact card identifying you as a participant in a research study. The card will contain contact information (including direct telephone numbers) in the event of an emergency.
- Not to drink grapefruit juice during the study
- Take study drug(s) as instructed. All study therapy will be administered once daily. Efavirenz (or matching placebo; look-alike with no active ingredients, sometimes called a sugar pill) is to be taken once daily at bedtime, and should be taken without food on an empty stomach. TRUVADA™ is to be taken with food daily with the morning dose of MK-1439 (or matching placebo). Store study drug as instructed.
- Write down when you take your study drug on the patient diary card given to you. Bring the diary card and all study drug containers with you to each study visit.

PART I

If you are in Part I of the study, you will be assigned by chance to get either 1 of 4 dose[s] of MK-1439 (25 mg, 50 mg, 100 mg, and 200 mg) **or** efavirenz (600 mg). MK1439 or Efavirenz will be taken with TRUVADA™. You have an equal chance of getting any of the 5 treatments (1:1:1:1:1) (about 40 patients per treatment group); however, you have a 4 in 5 chance of getting MK-1439 (any dose) and a 1 in 5 chance of getting efavirenz. After all 200 participants in Part I complete 24 weeks of treatment, the study sponsor will evaluate the data and will select one of the four doses (25 mg, 50 mg, 100mg or 200 mg) of MK-1439 for further study.

After the dose has been selected, all Part I participants assigned to MK1439 treatment will take that dose for the remainder of the treatment period. If you were assigned to the same dose that is selected, you will continue to take that dose. If you were assigned to receive MK-1439 at a dose different than the selected

dose, your dose will be switched to the selected dose at your next planned study visit. If you were assigned to efavirenz, you will continue to receive efavirenz. All patients will continue to receive TRUVADA™.

Part II
If you join the study in Part II (about 120 patients), you will be assigned by chance to get either MK-1439 or efavirenz (600 mg). The dose of MK1439 will be the dose that was selected in Part I. All participants in Part II will also be given TRUVADA™. You have an equal chance of getting either treatment (1:1) (about 60 patients per treatment group).

Blinded Treatment
Neither you nor the study doctor will know whether you are receiving MK-1439 or efavirenz (Part I and Part II); this is called blinded treatment. If you are in Part I of the study and your dose is switched to the final selected dose, your treatment will remain blinded. In case of an emergency, the study doctor can get this information. In order for your assigned treatment (MK-1439 or efavirenz) to remain blinded, you will also receive matching placebo (look-alike with no active ingredients) for the alternative treatment. You will also receive open-label TRUVADA™ (Part I and Part II) regardless of whether you are assigned to receive MK-1439 or efavirenz. Open-label means that both you and your study doctor will know that you are receiving it.

STUDY PROCEDURES
When you come in for your study visits, the study doctor or staff may do any or all of the following to measure if the study drug is working and/or to monitor your health:

- Review your medical history
- Review prior and current medication use
- Review any signs or symptoms (side effects) you have experienced
- Perform a 12-lead electrocardiogram (ECG; measures the electric activity of your heart)
- Perform a physical exam (including measuring your weight and checking your vital signs [blood pressure, pulse, temperature, and respiration]). Height will also be measured at screening.
- Collect blood samples for safety assessments, viral load (amount of virus in your blood), viral resistance, and immune system assessments, as well as pharmacokinetic (amount of study drug in your blood) sampling
- Collect urine samples for safety assessments
- Pregnancy testing (for women of childbearing potential)
- Dispense study drug and instructions
- Review your compliance with taking study drug
- You will also be asked to take part in optional future biomedical research (i.e., DNA analysis). You will be given a separate informed consent to describe this research.
- If you experience an adverse event (bad effect) from taking the study treatment, the study treatment may need to be stopped. After the event has resolved and your study doctor thinks you may benefit from continued participation in this study, it may be suggested that you resume taking the study drugs again (rechallenged). However, since it is uncertain whether the adverse effect was caused by the study regimen, it is possible that giving you the study regimen again may cause the same adverse effect to come back. It may return more severe than previously. Restarting the study regimen may also result in a different adverse effect. You will be asked to sign a separate consent if you are asked to be rechallenged to your study treatment.

RISKS AND BENEFITS

The medication used in this study may have side effects, some of which are listed below. Please note that these lists do not include all the side effects seen with these drugs. These lists include the more serious or common side effects with a known or possible relationship. If you have questions concerning the additional study medication side effects, then please ask the study staff.

There is a risk of serious and/or life-threatening side effects when non-study medications are taken with the study drugs. For your safety, you must tell the study doctor or nurse about all medications you are taking before you start the study and also before starting any new medications while on the study.

MK-1439

MK-1439 is being studied by Merck to see if it has any effect in treating HIV-1. MK-1439 has been given to about 98 healthy young men. Single doses up to 1200 mg have been given. Multiple daily doses up to 750 mg for 10 days and up to 120 mg for 14 days have been given. Single doses of MK-1439 up to 100 mg have been given to 14 healthy young women, 12 healthy elderly women and to 12 healthy elderly men.

Multiple doses of MK-1439 alone up to 200 mg have been given once daily for 7 days to 12 young HIV-1 infected men.

Multiple doses of MK-1439 up to 200 mg in combination with other approved HIV medications (combination therapy) have been given to 83 male and female HIV-1 infected patients who have never taken HIV drugs before; this study is ongoing and currently enrolling patients. So far, the longest period a patient has taken MK-1439 in this study is about 4 months. In this study, patients will take MK-1439 for up to two years. At this time, it is not known which patients are receiving MK-1439 or efavirenz (the other drug being used in the study).

Efavirenz

One of the drugs used in this study is efavirenz, which is marketed under the brand names SUSTIVA™ and STOCRIN™. This drug belongs to the class of medications known as a non-nucleoside reverse transcriptase inhibitor (NNRTI) and is prescribed for the treatment of HIV infection.

The efavirenz (SUSTIVA™) used in this study is made by Bristol-Myers Squibb Co. and not by the Sponsor. The matching placebo for efavirenz is made by the Sponsor, according to laws about clinical testing, to look like efavirenz. Neither the matching placebo nor this study is sponsored by, approved by, or affiliated with Bristol-Myers Squibb Co.

TRUVADA™

Another drug used in this study is a combination of 200 mg emtricitabine (+) 300 mg tenofovir disoproxil fumarate, which is marketed under the brand name TRUVADA™. This drug belongs to the class of medications known as Nucleoside/Nucelotide Reverse Transcriptase Inhibitors (NRTI) and is prescribed for the treatment of HIV infection.

TRUVADA™ is made by Gilead Sciences. This study is not sponsored by, approved by, or affiliated with Gilead Sciences.

RISKS FOR STUDY DRUGS

MK-1439:

The following side effects have been reported more than once by healthy men and women who were in studies of MK-1439:

• Headache/migraine	• Cough	• Diarrhea/loose stools
• Fatigue	• Sore throat	• Feeling that you have to urinate more often than usual
• Difficulty falling and/or staying asleep	• Dry mouth	• Muscle or joint pain /stiffness
• Dizziness with change in position	• Bruising	• Swollen or irritated skin
• Feeling like you are going to faint	• Nausea and stomach pain/discomfort	• Itching
• Common cold	• Pain swallowing	• vomiting
• Stuffy, runny or uncomfortable nose	• Back pain	• Shortness of breath
• Flu-like illness	• Neck pain	• Pain in leg or arm
• fever	• groin pain	• feeling of rapid or skipped heartbeats
• mouth infection	• inflammation of sinuses	• pain in chest/ribs
• tooth infection/abscess	• sudden or mild feeling of heat on upper part of body, lasting 30-60 seconds	

The following side effects have been reported more than once by HIV-infected men who were in a study of MK-1439 given alone for 7 days:

- Headache
- Nausea
- Diarrhea

The side effects seen with MK-1439 in healthy people or in HIV-infected men given MK-1439 alone were generally mild in intensity and did not last long.

Side effects rated as moderate in intensity:

- One event of dizziness
- One event of knee pain
- One event of fatigue
- Two events of headache
- One event of inflamed small intestine
- One event of diarrhea

One side effect was rated as severe in intensity.

- One person briefly fainted.

Two side effects were serious:

- One person had changes in blood tests that may show liver damage. The study doctor thought the blood test changes were likely caused by a hepatitis virus infection which the person got before taking MK-1439.
- One person had sarcoidosis (inflammation of lymph nodes, lungs, liver, eyes, skin, or other tissues. The study doctor did not think this was related to MK-1439.

To date, MK-1439 has not been given to many people. However, similar approved drugs (efavirenz, delavirdine, nevirapine, and etravirine) and other similar Merck study drugs have been given to people. The most common side effects seen in people taking these drugs include:

• Skin rash	• Headache	• Difficulty sleeping
• Fatigue	• Nausea and stomach pain/discomfort	• Abnormal dreams
• Changes in blood tests that may show liver damage	• Dizziness	• Depression
• Confusion	• Thoughts of suicide	• Diarrhea/loose stool
• A severe and potentially life threatening skin reaction (happens in less than 2 out of 1000 people)		• Flushing

During Part I of the study, patients will receive the research study drug, MK-1439, at one of four different doses, or efavirenz, each given with TRUVADA®. If the level of MK-1439 in your blood is not high enough, resistance (where drug doesn't work as well to fight HIV-1) to MK-1439 or other NNRTIs or TRUVADA®™ may develop. If resistance were to develop, there is a chance that your virus may not respond to other NNRTIs, other regimens with TRUVADA®, or to other drugs you have never taken.

Other, less common side effects have been reported. The study doctor or study staff can discuss these with you.

There may be other side effects or risks that are not known at this time.

Efavirenz:

The following serious side effects have been reported in some patients being treated with efavirenz:

- Severe depression
- Thoughts of suicide
- Suicide (attempted and completed)
- Angry behavior
- Strange thoughts
- Liver problems including liver failure resulting in transplantation or death

The following side effects of efavirenz have been commonly reported:

• Tiredness	• Headache
• Dizziness	• Rash
• Unusual dreams	• Nausea
• Trouble concentrating	• Upset stomach
• Sleepiness	• Diarrhea
• Trouble sleeping	• Vomiting
• Increased levels of cholesterol in blood	• Increased levels of triglycerides in blood

Other side effects with efavirenz include:

- Changes in body fat have been seen in some patients taking anti-HIV-1 medicine. These changes may include increased amount of fat in the upper back and neck ("buffalo hump"), breast, and around the 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 at this time.
- 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 with no obvious symptoms. If you notice any symptoms of infection, please inform your doctor immediately.

Other, less common side effects have been reported. The study doctor or study staff can discuss these with you.

There may be other side effects or risks that are not known at this time.

Women should not become pregnant while taking efavirenz and for 12 weeks after stopping it. Serious birth defects have been seen in the offspring of animals and women treated with efavirenz during pregnancy. It is not known whether efavirenz caused these defects.

TRUVADA™ (emtricitabine and tenofovir disoproxil fumarate)

The following information was reported for TRUVADA™ or one of the components of TRUVADA™ (emtricitabine and tenofovir).

The following serious side effects have been reported in some patients being treated with TRUVADA™:

- Lactic acidosis (build up of lactic acid in the blood)
- Serious liver problems (hepatotoxicity)
- "Flare up" of hepatitis B virus infection, in which the disease suddenly returns in a worse way than before, if you stop taking TRUVADA™.
- Kidney problems
- Changes in bone mineral density (thinning bones). Laboratory tests show changes in the bones of patients treated with tenofovir, a component of TRUVADA™.

The following are the most common side effects of emtricitabine or tenofovir when used with other anti-HIV-1 medicines:

• Dizziness	• Nausea
• Diarrhea	• Depression
• Fatigue	• Unusual dreams
• Headache	• Rash
• Trouble sleeping	• Vomiting

Additional side effects of emtricitabine or tenofovir when used with other anti-HIV-1 medicines reported include:

• Lactic acidosis (build up of an acid in the blood)	• Pain
• Inflammation of the pancreas	• Fatty liver
• Inflammation of the liver	• Stomach pain
• Allergic reaction	• Weakness
• Shortness of breath	• Indigestion

• Intestinal gas	• Skin discoloration (small spots or freckles)
• Kidney problems • High volume of urine caused by kidney problems • Muscle pain and weakness due to kidney problems • Bone pain due to kidney problems • Softening of the bone due to kidney problems • Thirst caused by kidney problems	

Other side effects with TRUVADA™ when used with other anti-HIV-1 medicines include:

- Changes in body fat have been seen in some patients taking TRUVADA™ and other anti-HIV-1 medicines. 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 at this time.
- 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 with no obvious symptoms. If you notice any symptoms of infection, please inform your doctor immediately.

These are not all of the side effects of TRUVADA™. The study doctor or study staff can discuss these with you. There may be other side effects or risks that are not known at this time. It is not known whether TRUVADA™ or one of the components (emtricitabine or tenofovir) may affect an unborn baby.

RISK FOR STUDY PROCEDURES

You may feel discomfort during some of these tests or may experience some inconveniences. Some may also have risks, which may include:

- Blood samples: Drawing blood from your arm may cause pain, bruising, lightheadedness, and rarely, infection.
- Electrocardiogram (ECG): Small sticky pads will be stuck to your chest, shoulders, and legs and a machine will measure the electrical activity of your heart. Small patches of your hair may need to be clipped in these areas. The sticky pads may cause some local irritation and may be uncomfortable to remove.
- Blood pressure and heart rate: An inflatable cuff will be placed on your arm and a machine will measure your blood pressure and heart rate. You may experience mild discomfort in your arm while the cuff is inflated.
- Fasting: Fasting for 8 hours could cause dizziness, headache, stomach discomfort or fainting.

PREGNANCY AND BREAST FEEDING

It is not known if the study drug(s) may affect an unborn or nursing baby. Serious birth defects have been seen in the offspring of animals and women treated with efavirenz during pregnancy. It is not known whether efavirenz caused these defects. Females who are pregnant, trying to become pregnant or breast-feeding, may not be in the study. The study doctor will perform a blood pregnancy test before the start of and during the study, for females who are able to have a baby. A urine pregnancy test will be performed at Visit 2. Males who are planning to impregnate or provide a sperm donation may not be in the study.

If you are of reproductive potential (i.e., able to have a baby or impregnate), you agree to:

- True abstinence: Abstinence in line with your preferred and usual lifestyle. [Periodic abstinence (e.g., abstinence only on certain calendar days, abstinence only during ovulation period, use of symptothermal method, use of post-ovulation method) and withdrawal are not acceptable methods of contraception.]
- Personal use (or partner use) of 2 acceptable methods of birth control method during the study and for a period of 12 weeks after completion of the study. The following birth control methods are allowed during the study:
  - oral contraceptves,
  - intrauterine device (IUD),
  - diaphragm with spermicide,
  - contraceptive sponge,
  - condom,
  - implantable contraceptives and
  - vasectomy.

If you or your partner becomes pregnant during the study you must notify the study doctor right away. If you are a female patient, the study drug will be stopped and you will be taken out of the study. All pregnancies (study patient or partner) will be followed for outcome. Patients who become pregnant will be asked to join a pregnancy registry which collects information about the outcome of the pregnancy.

NOTE: A patient who is not of reproductive potential, who is not sexually active, whose current partner(s) is not of reproductive potential, or whose sexual activity is exclusively homosexual is eligible without requiring the use of contraception.

You will be told in a timely manner about significant new information that might affect your decision to stay in the study.

Possible Benefits of the Study

If the drug works, you may have some benefit. If the drug does not work, you may not benefit. Information learned from the study may help other people in the future.

ALTERNATIVE TREATMENT OPTIONS

You can discuss other treatment options with your study doctor, including the option to take other anti-HIV drugs to treat your disease, or to take no treatment for HIV. These medicines include commercially FDA approved available medicines. Your study doctor will discuss appropriate alternative treatment options with you. You will be made aware of any new findings that become available during the course of the study that may affect your willingness to participate in this study.

STATEMENT ABOUT PRIVACY

If you decide to be in this study, the study doctor and research team will use health data about you to conduct this study, as described in this consent form. This may include your name, address, phone number, medical history, photographs, date of birth, and information from your study visits. This health data may come from your family doctor or other health care workers.

By signing this document, you agree to allow the research team to share health data about you with government agencies and ethics committees that oversee the research, the Sponsor, and those working for the Sponsor, which may include affiliates of the Sponsor located in your country or other countries. An affiliate of the Sponsor includes all companies directly or indirectly owned by Merck & Co., Inc. People who work for the Sponsor to make sure the study rules are followed will be able to see all health data about you at the study site.

When possible, the health data that is sent to the Sponsor and those working for the Sponsor will not identify you by name. Instead, it may include your initials, date of birth, and study visit dates. You will not be identified by name in any published reports about this study or in any other scientific publication or presentation. If you think that you were harmed from being in the study, the study team may also share health data about you with the Sponsor's insurer to resolve your claim.

The Sponsor and those working for the Sponsor, which may include affiliates of the Sponsor, may use the health data sent to them:

- to see if the study drug works and is safe;
- to compare the study drug to other drugs;
- for other activities (such as development and regulatory) related to the study drug.

For these uses, the Sponsor may share this health data with others involved in these activities, as long as they agree to only use the health data as described here. The Sponsor and those working for the Sponsor, which may include affiliates of the Sponsor, may transfer health data about you from your country to other countries where the privacy laws are not as strict. Once the research team shares health data about you with others, it may no longer be protected by privacy laws.

Your permission to use and share health data about you will not end

AUTHORIZATION TO USE AND DISCLOSE RECORDS

The authorization part of the consent gives more detailed information about how your personal health information may be used and disclosed by the University of Pennsylvania Health System (UPHS), the School of Medicine and the individual Principal Investigator, subject to University of Pennsylvania procedures.

What personal health information is collected and used in this study and might also be disclosed?

The following personal health information will be collected, used for research, and may be disclosed during your involvement with this research study:

- Name, address, telephone number, date of birth
- Social Security Number (if you receive more than $600 for participating in studies at PENN, we will need your SSN for the W-9)
- Personal and family medical history
- Current and past medications or therapies
- Results of physical exams, laboratory tests and procedures you will undergo during this research study

Why is your personal contact and health information being used?

Your personal contact information is important for the research team to contact you during the study. Your personal health information and results of tests and procedures are being collected as part of this research study. In some situations, your personal health information might be used to help guide your medical treatment.

Which of our personnel may use or disclose your personal health information?

The following individuals may use or disclose your personal health information for this research study:

- The Principal Investigator and the Investigator's study team
- Authorized members of the workforce of the UPHS and the School of Medicine, and University of Pennsylvania support offices, who may need to access your information in the performance of their

duties (for example: for research oversight and monitoring, to provide treatment, to manage accounting or billing matters, etc.).

Who, outside of UPHS and the School of Medicine, might receive your personal health information?
As part of the study, the Principal Investigator, the study team and others listed above, may disclose your personal health information, including the results of the research study tests and procedures. This information may be disclosed to those listed below:

Individuals or organizations responsible for administering the study:

- Pharmaceutical sponsor (Merck, Sharpe and Dome, Inc.): This is the company that supplies drugs for the study. Information regarding safety and adverse effects needs to be collected and monitored.
- Contract Research Organization: Monitors will visit the site on a regular basis to review data and assure accuracy and completeness of information before the data are analyzed.

Regulatory and safety oversight organizations

- The Food and Drug Administration and regulatory agencies in other countries
- The Office of Human Research Protections
- The Study Monitoring Committee

Once your personal health information is disclosed to others outside of UPHS or the School of Medicine, it may no longer be covered by federal privacy protection regulations. Data are reported to the sponsor on Case Report Forms that identify you by your unique study number and not your name or medical record number. Information regarding your health, such as side effects of the study medications you experience will be reported only by code number. All samples collected for analysis will be labeled with your study number, visit number and date of your visit.

The Principal Investigator or study staff will inform you if there are any additions to the list above during your active participation in the trial. Any additions will be subject to University of Pennsylvania procedures developed to protect your privacy.

How long may UPHS and the School of Medicine be able to use or disclose your personal health information?
Your authorization for use of your personal health information for this specific study does not expire.

Your information may be held in a research repository (database). However, UPHS and the School of Medicine may not re-use or re-disclose information collected in this study for a purpose other than this study unless:

- You have given written authorization to do so
- The University of Pennsylvania's Institutional Review Board grants permission after ensuring that appropriate privacy safeguards are in place
- As permitted by law

Will you be able to access your records?
During your participation in this study, you might not be able to access some or all of your medical records. For example, access to portions of your medical records may be denied in studies where your knowledge of study results included in such records could affect the reliability of the study. You will have access to your medical record information when the study is over or earlier, if possible. The Principal Investigator is not required to release research information to you that is not part of your medical record.

Can you change your mind?
Yes, at any time you may withdraw your approval to allow the use and disclosure of your personal health information as described here. You must do so in writing to the Principal Investigator at the address on the

first page. Even if you withdraw your permission, your personal health information that was collected before we received your written request may still be used and disclosed, as necessary for the study. If you withdraw your permission to use your personal health information, you will also be withdrawn from the research study.

You will be given a copy of this Research Subject HIPAA Authorization describing your confidentiality and privacy rights for this study. You will also be given the UPHS and School of Medicine's Notice of Privacy Practices that contains more information about the privacy of your personal health information.

What is an Electronic Medical Record?
An Electronic Medical Record (EMR) is an electronic version of the record of your care within a health system. An EMR is simply a computerized version of a paper medical record.

If you are receiving care or have received care within the University of Pennsylvania Health System (UPHS) (outpatient or inpatient) and are participating in a University of Pennsylvania research study, results of research-related procedures (i.e. laboratory tests, imaging studies and clinical procedures) may be placed in your existing EMR maintained by UPHS.

If you have never received care within UPHS and are participating in a University of Pennsylvania research study that uses UPHS services, an EMR will be created for you for the purpose of maintaining any results of procedures performed as part of this research study. The creation of this EMR is required for your participation in this study. In order to create your EMR, the study team will need to obtain basic information about you that would be similar to the information you would provide the first time you visit a hospital or medical facility (i.e. your name, the name of your primary doctor, the type of insurance you have). Results of research procedures performed as part of your participation in the study (i.e. laboratory tests, imaging studies and clinical procedures) may be placed in this EMR.

Once placed in your EMR, these results are accessible to appropriate UPHS workforce members that are not part of the research team. Information within your EMR may also be shared with others who are determined by UPHS to be appropriate to have access to your EMR (e.g. health insurance company, disability provider, etc).

WITHDRAWAL FROM STUDY AND REFUSAL TO PARTICIPATE

Special care will need to be taken when determining if you need to stop the study drug. Your study doctor will supervise any discontinuation of the study drug with your health as the first priority. Your participation in this study may be stopped at any time by a) your study doctor, b) Merck & Co., Inc., c) the FDA, d) the Institutional Review Board (a review group that gives approval to your study doctor to conduct this study), or (e) other appropriate regulatory agencies.

Your participation in this clinical research study is voluntary, and you can refuse to participate or stop at any time without stating a reason. Your withdrawal will not affect your access to other medical care.
Your study doctor may withdraw you from the study if it is considered important for your medical safety. If it is learned that you did not give an accurate medical history or did not follow the instructions for the study given by your study doctor and/or study nurse, you may be taken off the study at any time. If you are taken off the study, you will no longer receive the study drugs.

COST OF TREATMENT

Some of the tests or treatments used in this study may be part of standard care used to maintain your health even if you did not take part in this study. You or your insurance company may be responsible for the cost of this standard care. All study drugs and study-related tests will be provided at no cost to you.

PAYMENT FOR PARTICIPATION

This study has a total of 15 visits [Screening visit (Visit 1), Day 1 (Visit 2), and at Weeks 2, 4, 8, 12, 16, 24, 36, 48, 60, 72, 84, and 96 (Visits 3 to 14), and 14 days after you complete study treatment (Visit 15)] for which you will be compensated $50 each visit. At Visits 4 and 6, when the two PK samples are drawn, you will be compensated an additional $49 at this visit. Thus if you attend all required visits for the study, the maximum payment you can receive is $848. If you need to come in for an unscheduled visit that is requested by the study staff, you also will be paid $ 25 for that visit.

Please note that if you receive more than $600.00 compensation in one year for participation in research studies at the University of Pennsylvania, you must provide an Individual Tax Identification Number or Social Security Number for tax purposes. If you get benefits, such as Medicaid, that have income restrictions, you should make certain that the compensation from the study will not affect these benefits.

COMPENSATION FOR STUDY-RELATED INJURY

If you are injured as a direct result of the study drug or a properly performed procedure required by the study plan, the study sponsor will pay the reasonable costs of medical treatment. The study sponsor will not provide any other form of compensation.

SOURCE FOR ADDITIONAL INFORMATION

For questions about this study or a research-related injury, contact:

- Pablo Tebas, MD (215-349-8092)
- Clinical Trials Unit (215 349-8092)

For questions about your rights as a research subject, contact:

- Director of Regulatory Affairs at the University of Pennsylvania by phoning (215) 898-2614

CLINICALTRIALS.GOV REGISTRY

A description of this clinical trial will be available on http://www.ClinicalTrials.gov, as required by U.S. Law. This Web site will not include information that can identify you. At most, the Web site will include a summary of the results. You can search this Web site at any time.

CONSENT

When you sign this form, you are agreeing to take part in this research study. This means that you have read the consent form, your questions have been answered, and you have decided to volunteer. Your signature also means that you are permitting the University of Pennsylvania Health System and the School of Medicine to use your personal health information collected about you for research purposes within our institution. You are also allowing the University of Pennsylvania Health System and the School of Medicine to disclose that personal health information to outside organizations or people involved with the operations of this study.

By signing below, I agree that:

- I have read this consent form.
- I have had the chance to ask questions and they have been answered.
- I understand that taking part in this study is voluntary.
- I give permission to use and share my health data as described in this form.
- I may choose not to be in the study or to leave the study at any time by telling the study doctor. I will not be penalized or lose any benefits to which I am otherwise entitled.
- I may have to leave the study without my consent if I need other treatment, do not follow the study plan, have a study-related injury, or for any other reason.
- If I leave the study for any reason, the study doctor may ask me to have some end-of-study tests.

I will receive a signed and dated copy of this consent form.

STATEMENT OF CONSENT

I have read this form and its contents were explained to me. I agree to be in this research study for the purposes listed above. All of my questions were answered to my satisfaction. I will receive a signed and dated copy of this form for my records. I am not giving up any of my legal rights by signing this form.

_____	_____	_____
Printed Name of Volunteer **OR**	Signature	Date (MM/DD/YYYY)
_____	_____	_____
Printed Name of Volunteer's Legally Authorized Representative	Signature	Date (MM/DD/YYYY)
	_____	
Representative's Authority to Act for Volunteer		

Printed Name of Research Subject

STATEMENT OF PERSON EXPLAINING CONSENT

I have carefully explained to the subject the nature and purpose of the above study. There has been an opportunity for the subject to ask questions about this research study. I have been available to answer any questions that the subject has about this study.

_____ ____/____/____
Signature of Person Explaining Consent Date

_____
Printed Name and Title of Person Explaining Consent

APPENDIX:

List of PROHIBITED Medications
Carbamazepine
Phenobarbital
Phenytoin
Rifabutin
Rifampin
Herbal remedies
Astemizole
Cisapride
Midazolam
Triazolam
Ergot derivatives
Voriconazole
Pimozide
Bepridil

This is a list of prohibited medications for the study which have potential interactions with the drugs used on this study. A complete medication history will be done as part of the study; all medications you are taking should be brought to the attention of the study team.