



**Patient
Information**

Leukine[®]
sargramostim
A Recombinant GM-CSF–Yeast-Expressed

IMPORTANT NOTE

Please read ALL information about LEUKINE in this Patient Information leaflet before administering any injections.

This patient package insert contains information and directions for patients and their caregivers who are receiving or giving injections of LEUKINE at home. This package insert is intended to supplement discussions with your healthcare provider and does not take the place of talking with your doctor, nurse, or pharmacist. If you have any questions about your treatment with LEUKINE, be sure to discuss them with your healthcare team.

LEUKINE ACTIONS AND USES

LEUKINE (loo'-kine) is the brand name of sargramostim (sar-gram'-oh-stim) and is also known as granulocyte-macrophage colony-stimulating factor, or GM-CSF for short. LEUKINE is a man-made form of a protein, called a growth factor, that is almost identical to a protein your body makes when it is functioning normally. This growth factor helps to increase the number and function of your white blood cells, specifically neutrophils, monocytes/macrophages, and myeloid-derived dendritic cells. White blood cells, which are made in your bone marrow (the soft center of your bone), fight infections from bacteria, fungi, and viruses by surrounding and destroying them. White blood cells also help to repair tissues by removing dead and damaged cells.

If your white blood cell count (the number of white blood cells in your blood) falls to a very low level, your chance of getting an infection increases. The purpose of using LEUKINE is to help your bone marrow make more white blood cells, which in turn can help your immune system recover.

LEUKINE is used to help increase the number and function of white blood cells after bone marrow transplantation, in cases of bone marrow transplantation failure or engraftment delay, before and after peripheral blood stem cell transplantation, and following induction chemotherapy in older patients with acute myelogenous leukemia. Your doctor may also choose to treat other conditions with LEUKINE.

Your doctor has prescribed LEUKINE for you. If you are also receiving chemotherapy or radiation therapy,

do not take your LEUKINE in the period 24 hours before through 24 hours after the administration of your chemotherapy or radiation therapy. You may also need a blood test so that your doctor can monitor your white blood cell count and, if necessary, adjust your LEUKINE dose.

POSSIBLE SIDE EFFECTS

Some patients taking LEUKINE may experience unwanted side effects, most of which are mild to moderate and not serious. Not everyone who receives LEUKINE will experience side effects. Some of the more common side effects include bone pain, feeling like you have the flu, feeling tired or weak, muscle aches, diarrhea, or stomach upset. You may also get a low fever (less than 100.5°F or 38°C) about one to four hours after an injection, or you may have swelling, redness, and/or discomfort where LEUKINE is injected. Your doctor, nurse, or pharmacist will tell you about other possible side effects. Many of these side effects can be reduced or eliminated. Talk to your doctor, nurse, or pharmacist about what you should do if any of these things happen to you.

Some side effects or symptoms may be serious. These may be due to LEUKINE, your illness, or other treatments you may have received. Call your doctor immediately if any of the following happen to you:

- You develop a high fever (over 100.5°F or 38°C).
- You notice any signs of infection including chills, sore throat, or congestion (such as a stuffy nose).
- You have trouble breathing, or you develop wheezing, fainting, extensive skin rash, or hives, or feel you are having an allergic reaction (see *ALLERGY TO LEUKINE* section below).
- You experience sudden weight gain or other signs of fluid build-up such as swollen legs or feet.
- You develop chest pain, chest discomfort, or a rapid or irregular pulse.

If you are concerned about any other side effects or symptoms you may be having, contact your doctor, nurse, or pharmacist.

ALLERGY TO LEUKINE

A generalized allergy is an uncommon but potentially serious reaction to LEUKINE. This may include a skin

rash over your entire body, hives, trouble breathing, a fast pulse, sweating, and feeling faint. In severe cases a generalized allergy may be life-threatening. If you think you are having a generalized allergy to LEUKINE, stop taking LEUKINE and notify your doctor immediately.

USAGE IN PREGNANCY AND BREASTFEEDING

If you are pregnant, are trying to become pregnant, or are breastfeeding, you should consult your doctor before taking LEUKINE.

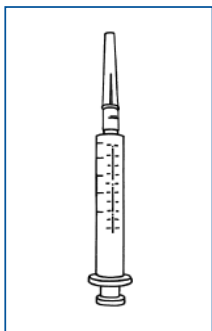
STORAGE OF LEUKINE

LEUKINE should be stored in the refrigerator but **not** in the freezer compartment. Do not shake LEUKINE. Do not use LEUKINE that has been frozen. Keep LEUKINE out of direct sunlight. Do not use LEUKINE beyond the expiration date printed on the vial label. Once the vial has been used, any remaining LEUKINE should be stored in the refrigerator and used within 20 days (be sure to mark down the date you first used the vial). Throw away any remaining LEUKINE after 20 days.

INSTRUCTIONS FOR PREPARING AND GIVING A SELF-INJECTION

Use the Correct Syringe and Dose

If your doctor has recommended that you take LEUKINE at home, your doctor, nurse, or pharmacist should have instructed you and/or your caregiver on how LEUKINE should be prepared, how it should be injected, and how often it should be injected.



The dose will usually be measured in milliliters (mL) or cubic centimeters (cc). (For example: 0.8 mL or 0.8 cc). It is important that you use a syringe that is marked in tenths (1/10) of a milliliter or cubic centimeter (for example: 0.1, 0.2, 0.3, 0.4, 0.5, etc., to 1.0 mL or cc) so that you are able to measure the correct dose prescribed by your doctor. A 3-cc syringe with a 25- to 30-gauge 5/8-inch needle or the syringe and needle size specified by your doctor may be used. Your doctor will either supply you with the correct syringes and needles, or will write you a prescription so you can get the correct syringes and needles from your pharmacy.

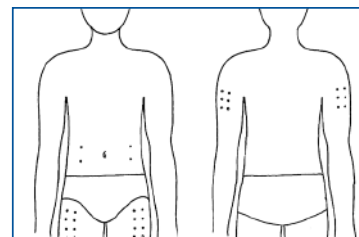
It is very important that you use the correct needle and syringe. Failure to use the correct syringe could result in your receiving either too little or too much LEUKINE. If you receive too little LEUKINE, it may not be effective. If you receive too much LEUKINE, your white blood cell count may get too high, which may be harmful.

Your dose has been selected to meet your individual needs. Do not change your dose without consulting your doctor. If you are not sure about the amount (mL or cc) or dose to be used, talk to your doctor, nurse, or pharmacist.

INJECTION SITE

Choosing an Injection Site

Your doctor, nurse, or pharmacist has instructed you on how to give yourself a subcutaneous (under the skin) injection of LEUKINE. The best areas for self-injecting LEUKINE are the thighs or stomach. The navel and waistline should be avoided. If a caregiver is helping with the injections, you may be instructed to inject on the back portion of the upper arms. It is a good idea to know where your injection will be given before you prepare your dose.



Rotating Injection Sites

It is important to use a different injection site each time to avoid soreness in any one area. A new injection should not be given in the same area as the last injection. It is a good idea to alternate your injection sites from one thigh to the stomach and then to the other thigh. This is called rotating your injection sites. Injection sites should be at least one inch apart. Do not choose an area where the skin is tender, bruised, red, or hard. To keep track of your injection sites, keep a record of where and when you give yourself an injection. One way to do that is to note the injection site on a calendar or in a diary along with the date you first used the vial. If all areas become tender, talk to your doctor, nurse, or pharmacist about choosing other injection sites.

Injection Site Skin Reactions

Occasionally a skin reaction may occur at the injection site. This usually will not require you to stop taking LEUKINE. The skin may become red, painful, or swollen. If a skin reaction occurs, contact your doctor. The following steps may be taken to help prevent further skin reactions:

- At least 30 minutes before you plan to inject, remove your LEUKINE from the refrigerator and allow it to come to room temperature before injecting.
- Rotate the injection sites from one injection to the next.
- Apply ice to the site for one minute immediately prior to injection.
- Inject the LEUKINE slowly.
- Avoid rubbing the skin before or after injecting.

GIVING YOURSELF AN INJECTION

Before using LEUKINE for the first time, talk to your doctor, nurse, or pharmacist about how to use it, what to expect when using it, possible side effects, and what to do if side effects occur. You must be instructed and trained properly in how to prepare and inject LEUKINE by your doctor, nurse, or pharmacist prior to using it. Do not attempt to self-administer LEUKINE until you are sure that you understand the instructions for giving an injection to yourself. Your dose has been selected to meet your individual needs. Do not change your dose without consulting your doctor. If you are unsure about the amount (mL or cc) or dose to be used, how to inject yourself, or how often to inject yourself, talk to your doctor, nurse, or pharmacist.

IMPORTANT: IT IS VERY IMPORTANT THAT YOU CAREFULLY READ THESE INSTRUCTIONS AND FOLLOW THEM EXACTLY IN ORDER TO HELP AVOID CONTAMINATION OF THE LEUKINE AND POSSIBLE INFECTION.

Remove LEUKINE From the Refrigerator and Inspect the Vial and Contents

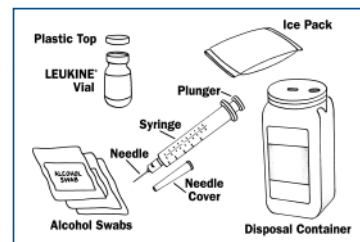
1. Take the LEUKINE vial out of the refrigerator at least 30 minutes before you plan to inject, allowing it to come to room temperature. Do not leave the vial in direct sunlight.
2. Check the date on the label to make sure the LEUKINE has not expired; if it has, contact your

doctor, nurse, or pharmacist for further instructions. LEUKINE should be clear and colorless. If it is not, or if the LEUKINE appears to contain lumps, flakes, or particles, contact your doctor, nurse, or pharmacist.

3. **DO NOT SHAKE** the vial. Shaking the vial could cause froth or bubbles to appear. Although this will not affect how well LEUKINE will work, it could decrease the amount of LEUKINE that you are able to draw into the syringe. If the LEUKINE looks frothy or bubbly, use another vial. Return the frothy or bubbly vial to the refrigerator and allow it to settle for use on another day.

Gather Your Supplies and Prepare Your Work Area

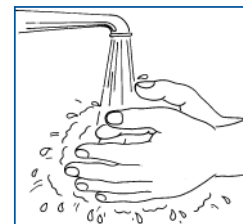
4. Select a clean, convenient, well-lit location to lay out your supplies. It is a good idea to wipe down the area with an alcohol swab to make sure it is germ-free. Gather the following supplies along with the LEUKINE:
 - A sterile syringe and needle (as specified by your doctor, nurse, or pharmacist)
 - Prepackaged alcohol swabs
 - Ice pack
 - A puncture-resistant container for disposal of the needle and syringe (see step 22 regarding proper disposal container)



Choose and Prepare the Injection Site

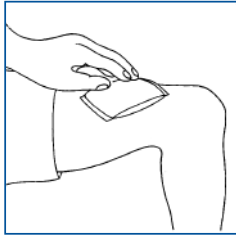
5. Wash your hands thoroughly with soap and warm water, and dry them with a clean towel.

This should be done just before cleaning the injection site and preparing the LEUKINE dose.



6. Choose an injection site. Do not choose an area where the skin is tender, bruised, red, or hard. As you have been instructed, choose a different site with each injection. Today's injection should not be given in the same area as your last injection. To keep track of your injection sites, you may want to record the injection site you picked on a calendar or in a diary. For additional information, please refer to the INJECTION SITE section above.

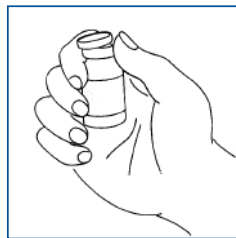
7. Ice the site for about 1 minute before your injection. Then, with an alcohol swab, wipe the skin where



the injection will be made using a gentle circular motion. Allow the skin to dry for about 10 seconds. Set the used alcohol swab aside. Do not re-use this alcohol swab.

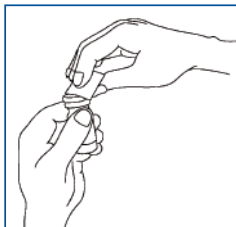
Withdraw the LEUKINE From the Vial

8. The LEUKINE should now be at room temperature. **DO NOT SHAKE** the vial.

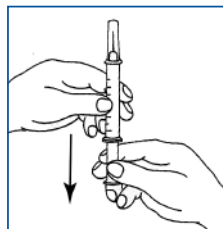


9. Flip off the plastic cap from the LEUKINE vial. Do not remove the gray rubber stopper.

10. Wipe the top of the rubber stopper with a new alcohol swab. Set the used alcohol swab aside. Do not touch the rubber stopper with your hands or fingers. If you do touch the stopper, clean it again with a new alcohol swab.



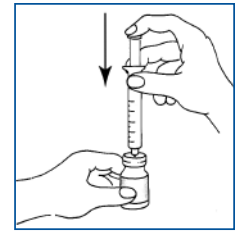
11. Remove the syringe and needle specified by your doctor from its packaging. With the cover still on the needle, draw air into the syringe by pulling back on the plunger. The amount of air you draw into the syringe should be equal to your LEUKINE dose.



12. Carefully remove the needle cover. Do not lay down the syringe or allow the needle to touch anything. If the needle touches any surface, including your hands, throw away the needle and syringe in your disposal container and start over (at step 11) with a new syringe and needle.

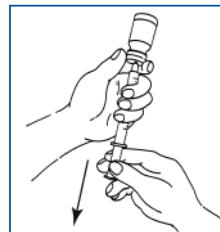
13. With the vial **upright**, insert the needle downward, through the center of the gray rubber stopper.

After the needle penetrates the gray rubber stopper, push the plunger all the way in to inject the air into the vial. Make sure the needle is above the LEUKINE. Try not to inject



the air into the LEUKINE because bubbles may form, making it hard for you to withdraw the correct LEUKINE dose. The air you just injected into the vial will make it easier for you to withdraw the LEUKINE into the syringe. Leave the needle in the rubber stopper.

14. Without withdrawing the needle from the rubber stopper, turn the vial **upside down**. Then, move the needle tip into the LEUKINE. Now slowly pull back on the plunger until the correct dose of LEUKINE is in the syringe.

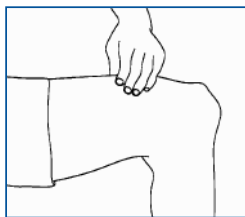


15. Before withdrawing the needle from the rubber stopper, be sure there are no air bubbles in the syringe. The air bubbles are harmless but they can decrease the amount of LEUKINE you receive. If there are air bubbles, gently tap the syringe with your fingers until the air bubbles rise to the top of the syringe. To remove air bubbles, gently push some of the solution back into the vial. Now slowly pull back on the plunger until the correct dose of LEUKINE is in the syringe. Repeat this procedure as needed until you can draw up the correct dose of LEUKINE without air bubbles.

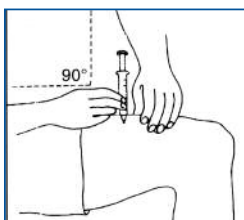
16. Withdraw the needle from the rubber stopper. Do not lay down the syringe or allow the needle to touch anything.

Inject the LEUKINE

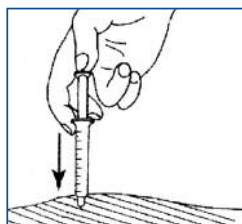
17. With one hand, gently smooth the skin of the injection site (the area you wiped with the alcohol swab) between your thumb and forefinger so it is taut.



18. With your other hand, hold the syringe, just like a pencil, at a 90-degree angle to the skin, about 2 inches above the surface of the skin. Using a quick, short motion, insert the needle.



19. Release your grasp on the skin. Gently pull back on the plunger just a little bit (about 1/8 of an inch). If you do not see blood in the syringe, slowly inject all of the LEUKINE by pushing the plunger all the way down.



If you see blood in the syringe, do not inject the LEUKINE. Withdraw the needle at the same angle it was inserted. Finding blood in the syringe simply means you hit a blood vessel rather than the fatty tissues you need to inject into and is not a cause for concern. Discard the syringe in a puncture-resistant container. Repeat the steps to prepare a new syringe. Choose, clean, and ice a new injection site. Remember to check again for blood before injecting LEUKINE.

20. Remove the needle at the same angle as it was inserted.

21. Lightly touch an alcohol swab over the injection site until any bleeding has stopped. Do not rub or press the site because doing so may irritate the area.



Dispose of Supplies

22. It is extremely important that you do not reuse syringes or needles. Do not attempt to put the needle cover back on the needle. Throw away used syringes and needles in a puncture-resistant container as instructed by your doctor, nurse, or pharmacist. They may be able to supply you with a container made specifically for disposing of used syringes and needles. If not, then you may use the following:



- A hard plastic container that you cannot see through with a screw-on cap, such as an empty bleach or laundry detergent bottle. Always screw the cap on tightly after disposing of your syringes and needles. Do not recycle the container.
 - A metal container with a plastic lid, such as a coffee can. Cut a hole in the plastic lid and tape the lid to the metal container.
 - DO NOT use a glass or clear plastic container, or any container that will be recycled or returned to a store.
23. Keep the container out of the reach of children. Make sure the container is properly labeled as to its content. When the container is about two-thirds (2/3) full, dispose of it as instructed. There may be special state and local laws regarding the proper disposal of needles and syringes that your doctor, nurse, or pharmacist may discuss with you.
24. Throw away empty LEUKINE vials and used alcohol swabs in the trash, unless otherwise instructed.
- 25. If the vial has any remaining LEUKINE, return the used vial to the refrigerator for use the next day. Do not freeze. Used vials containing LEUKINE should be stored in the refrigerator and used within 20 days (be sure to mark down the date you first used the vial). After 20 days, throw away any remaining LEUKINE.**

IMPORTANT NOTES

1. Follow the instructions given to you by your doctor, nurse, or pharmacist. Do not make any changes in your dose or how often you give yourself LEUKINE. If you are not sure about the amount (mL or cc) or dose to be used, talk to your doctor, nurse, or pharmacist.
2. Try to get into a routine; give yourself LEUKINE at the same time each day.
3. Keep LEUKINE and all supplies out of the reach of children.
4. If any of the following happens to you, contact your doctor, nurse, or pharmacist:
 - You miss a dose of LEUKINE.
 - You notice anything unusual about your condition while you are taking LEUKINE.
 - You develop a high fever (over 100.5°F or 38°C).
 - You notice any signs of infection, including chills, sore throat, or congestion (such as a stuffy nose).