Tacrolimus (Prograf) Overview

Tacrolimus is an immunosuppressant medication used to prevent organ rejection in transplant patients and is also indicated in the treatment of atopic dermatitis. Tacrolimus works by inhibiting an enzyme called calcineurin that is responsible for production of cytokines such as IL-2. Suppression of IL-2 decreases B cell and cytotoxic T cell production, effectively suppressing the patient’s immune system. Patients taking tacrolimus should not drink grapefruit juice, as it prevents the drug from being metabolized and can lead to toxicity. It is important to note that tacrolimus can increase a patient’s risk of developing malignant lymphomas.



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Mechanisms

Immunosuppressant
Moon-suppressed
Tacrolimus is an immunosuppressant medication used to prevent organ rejection in liver, kidney and heart transplant patients. Tacrolimus works by inhibiting an enzyme called calcineurin that is responsible for production of cytokines such as IL-2.

Inhibits Calcineurin, Decreasing IL-2
Inhibiting-chains on Calcium-cow-urchin with Down-arrow from Interlocked (2) Tutu spines
Inhibition of calcineurin suppresses production of cytokines, such as IL-2, that are responsible for producing B cells and cytotoxic T cells. By decreasing production of these cells, tacrolimus effectively suppresses the patient’s immune system.

Indications

Transplant Rejection
Train-plant Rejected
Tacrolimus is an immunosuppressant medication, usually given with a glucocorticoid, used to prevent organ rejection in transplant patients.

Atopic Dermatitis
A-top-hat Dermatologist Examining Rash
Atopic dermatitis, also called eczema, is an inflammatory skin disease. Tacrolimus is available as a topical ointment for the treatment of this condition. Tacrolimus works locally to suppress the release of inflammatory mediators, effectively decreasing inflammation associated with atopic dermatitis.

Considerations

Increased Lymphoma Risk
Up-arrow Risk of Lime-foam
Tacrolimus can increase a patient’s risk of developing malignant lymphoma.

Avoid Grapefruit Juice
Avoid-sign at Grapefruit Juice
Patients taking Tacrolimus should not drink grapefruit juice. Grapefruit juice prevents the drug from being metabolized and can lead to toxicity.

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