P450 Inducer

Cytochrome P450 is a large superfamily of enzymes essential for drug metabolism and bioactivation. In humans, most cytochrome P450 enzymes are membrane-associated proteins found throughout body tissues. They play key roles in hormone synthesis and breakdown, cholesterol production, and vitamin D metabolism. P450 inducers are drugs that increase enzyme activity, leading to faster metabolism of other drugs processed by this system. Commonly tested inducers include phenytoin, griseofulvin, St. John's Wort, carbamazepine, rifampin, barbiturates, and chronic alcohol use.



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Griseofulvin
Grizzly-full-bear
Griseofulvin is an orally administered antifungal drug for treatment of fungal infections of skin and nails. This drug interferes with microtubule function and therefore disrupts mitosis of fungal organisms.

Phenytoin
Phone-tow-truck
Phenytoin is a commonly used antiepileptic drug. It acts to suppress abnormal brain activities via blockade of sodium channels. It is also a class 1B anti-arrhythmic

Carbamazepine
Car-bomb-maze-pine
Carbamazepine is an anticonvulsant and mood stabilizing drug. It is commonly used for epilepsy and trigeminal neuralgia

Rifampin
Ref-amp
Rifampin is used mainly for the treatment of active Mycobacterium tuberculosis. It acts by inhibiting the DNA dependent RNA polymerase

Barbiturates
Barbara-doll
Barbiturates are drugs that depress the central nervous system by increasing the duration of chloride channel opening and thus decreasing neuron firing. They are commonly used for anxiety and seizures.

Chronic Alcohol Use
Old Crone with Alcohol
Chronic alcohol use causes the liver to increase transcription and translation of p450 enzymes to metabolize the toxic byproducts of alcohol and induces the p450 system

St. John's Wort
Saint John on a Wart
St. John's Wort is best known as an herbal treatment commonly used for mild depression

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