

Taxol: A Antineoplastic-Taxanes type of Anticancer drug

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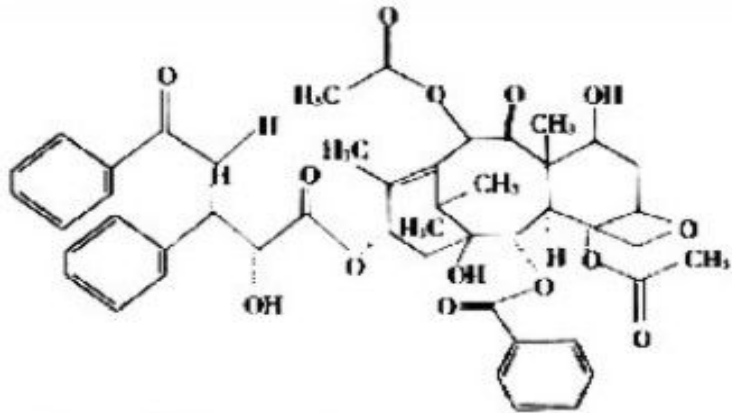
By Alexander N. Enriquez Wong



What is Taxol

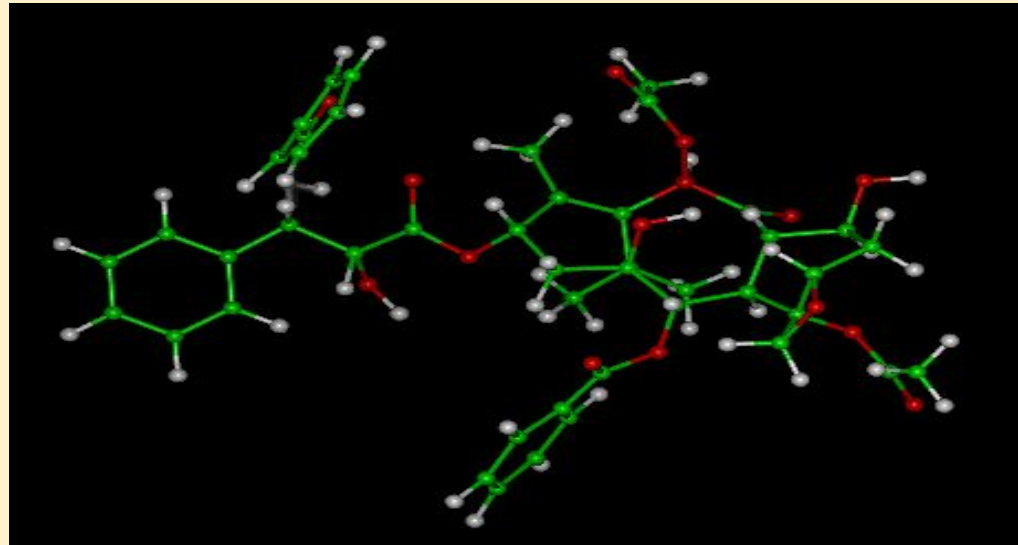
Taxol or paclitaxel (PTX) is a drug that treats AIDS-related Kaposi sarcoma, breast cancer, malignancy, non-small cell lung cancer, pancreatic cancer, and ovarian cancer. The diseases are a kind from cancer and cancer is a disease that is caused when cells divide uncontrollably and spread into surrounding tissues also starts with genetic changes.

Taxol Chemical
Structure/Formula



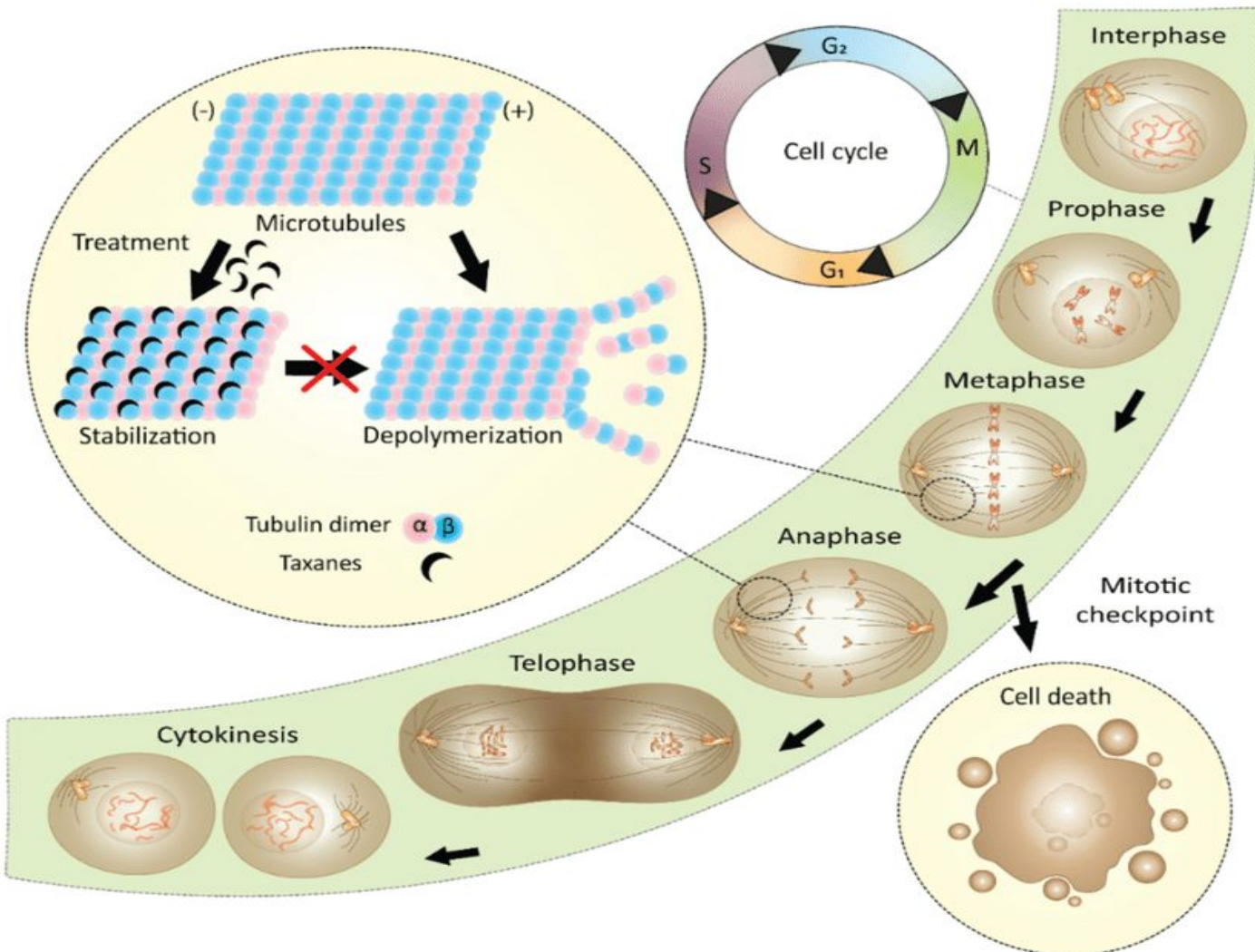
Paclitaxel

$C_{47}H_{51}NO_{14}$ 853.92



How does Taxol Work?

Taxol, an antimicrobial agent used to treat cancer blocks cancer cell growth by stopping cell division(stabilized the spindle during mitosis, thereby blocking mitosis), resulting in cell death. An NCI-funded clinical trial found that 30 percent of patients with advanced ovarian cancer responded positively to taxol treatment. Today, taxol is on the World Health Organization's Model List of Essential Medicines. Also the side effects that may occur from using Taxol are nausea, vomiting, diarrhea, mouth sores, muscle/joint pain, numbness/tingling/burning of the hand/ feet, flushing, dizziness, drowsiness, or temporary hair loss.



Pic. of how Taxol works in the body

Some of the History of Taxol

Taxol was discovered by Monroe Wall, Mansukh Wani and colleagues at the Natural Products Laboratory of the Research Triangle Institute. In the 1960s, NCI-funded researchers discovered the life saving natural compound paclitaxel, which later became the cancer drug called Taxol. Since its discovery, this remarkable compound has expanded treatment options for patients with breast and ovarian cancers, giving them hope for a cure. 1992-Present in December 1992, the FDA approved Taxol for the treatment of ovarian cancer. Researchers also tested the effectiveness of Taxol as a treatment for advanced breast cancer.

where taxol comes from



Some other Information About Taxol

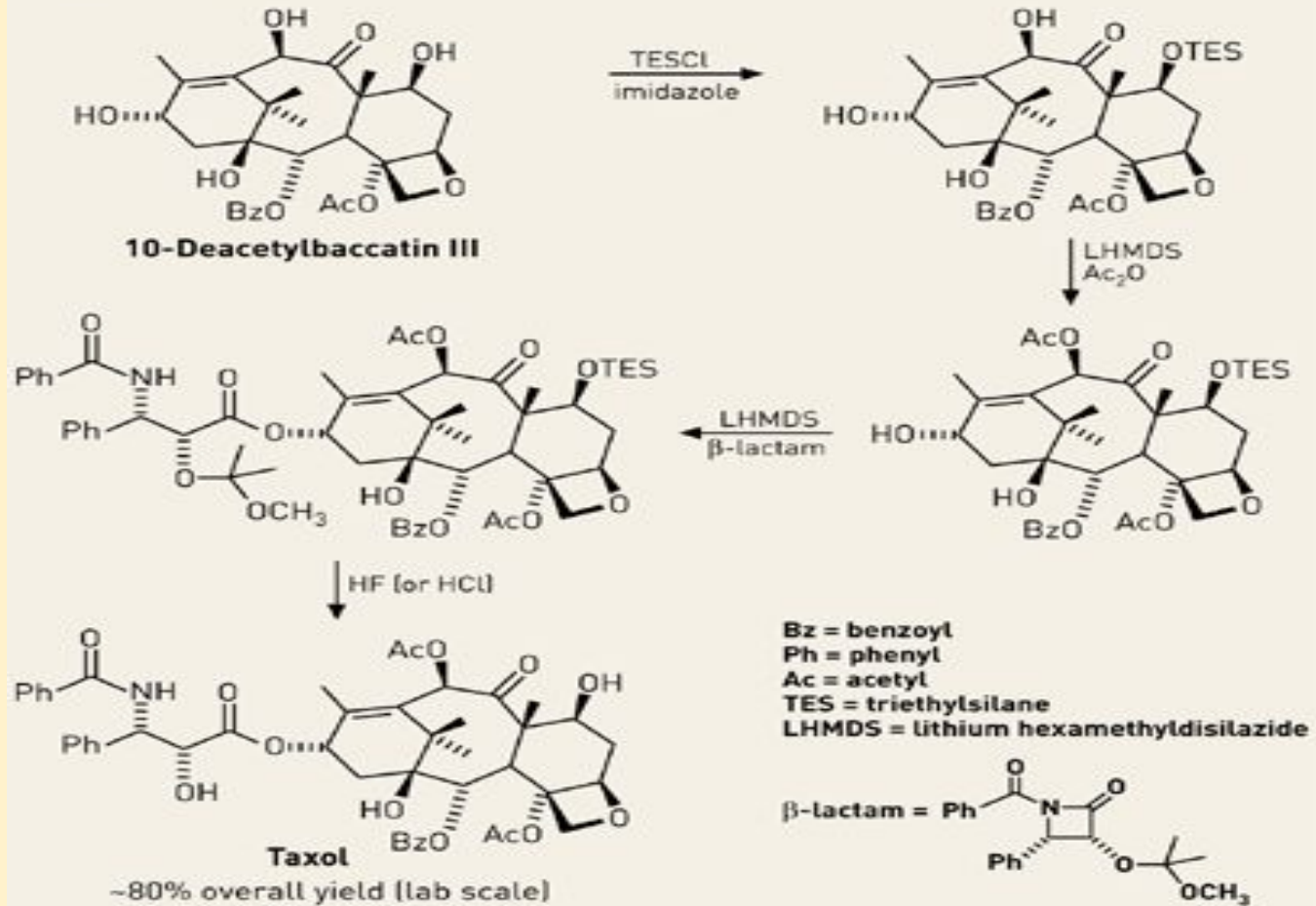
The price to wholesalers for each 30 mg vial of taxol will be \$146.10, with an average three-week cycle of treatment costing around \$1,000. Taxol is one of the most affordable and best-selling chemotherapy drugs, and with an annual sales over \$1billion and taxol is also called paclitaxel(PTX).

The CAS registry for taxol 3306-62-4

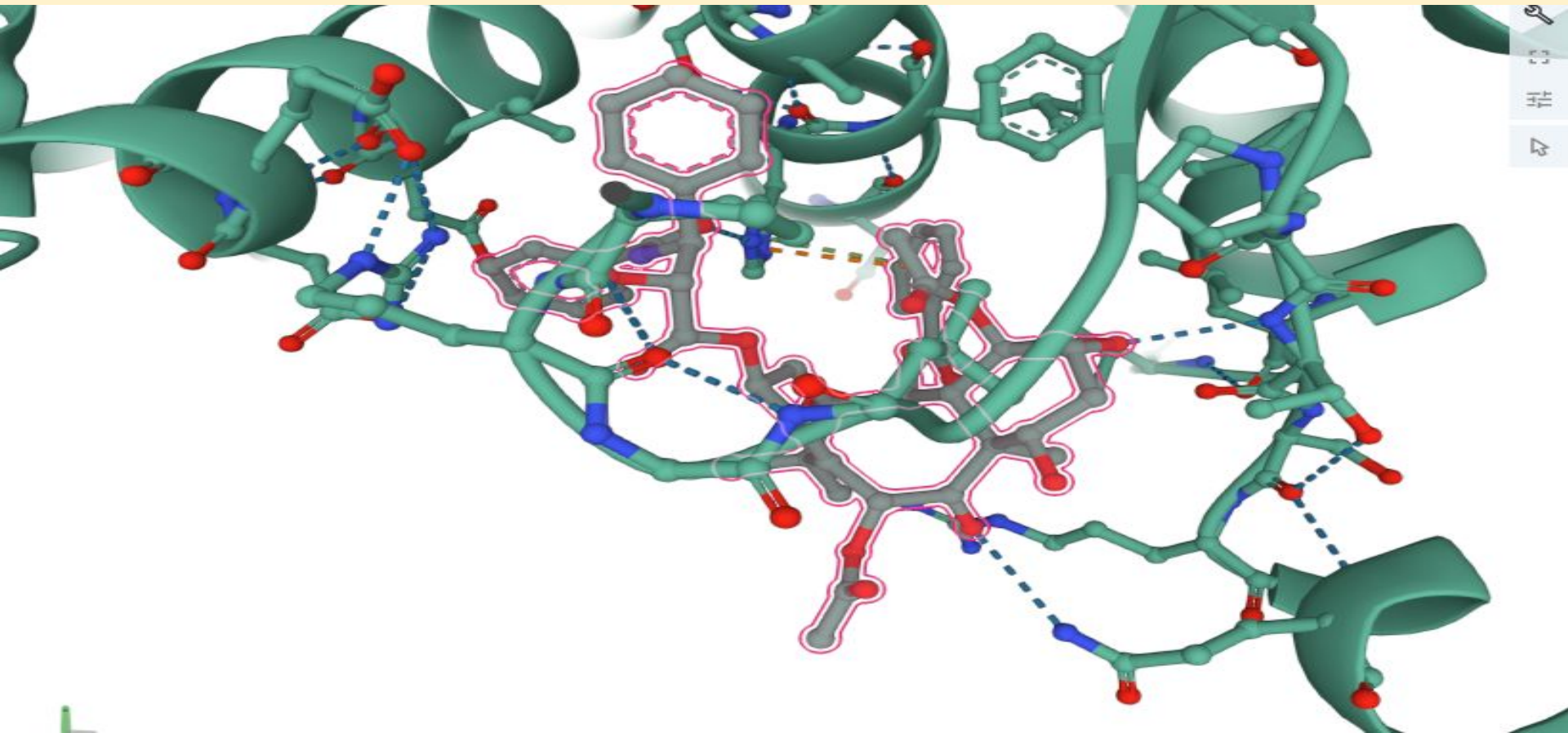
Taxol Synthesis

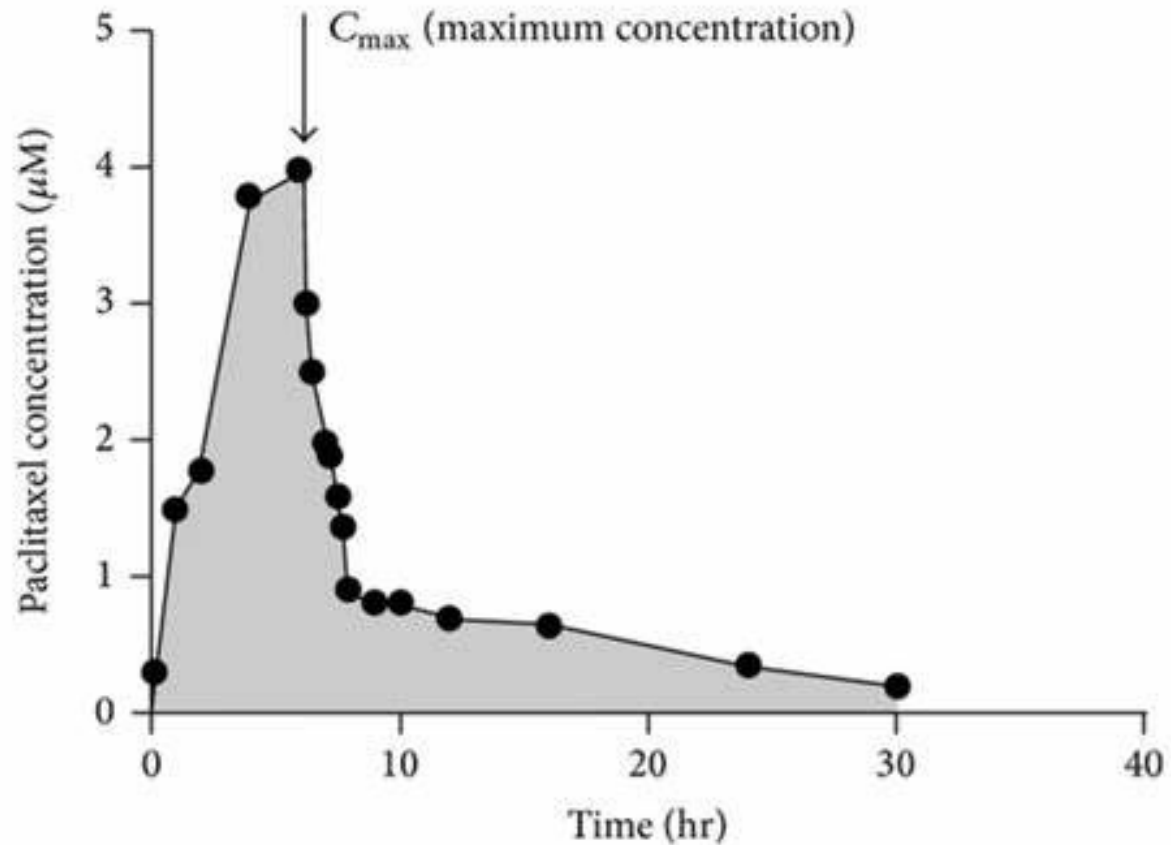
REVOLUTIONARY


Florida State University's semisynthesis of Taxol made large-scale production of the drug possible



Crystal structure of Taxol, of the binding side

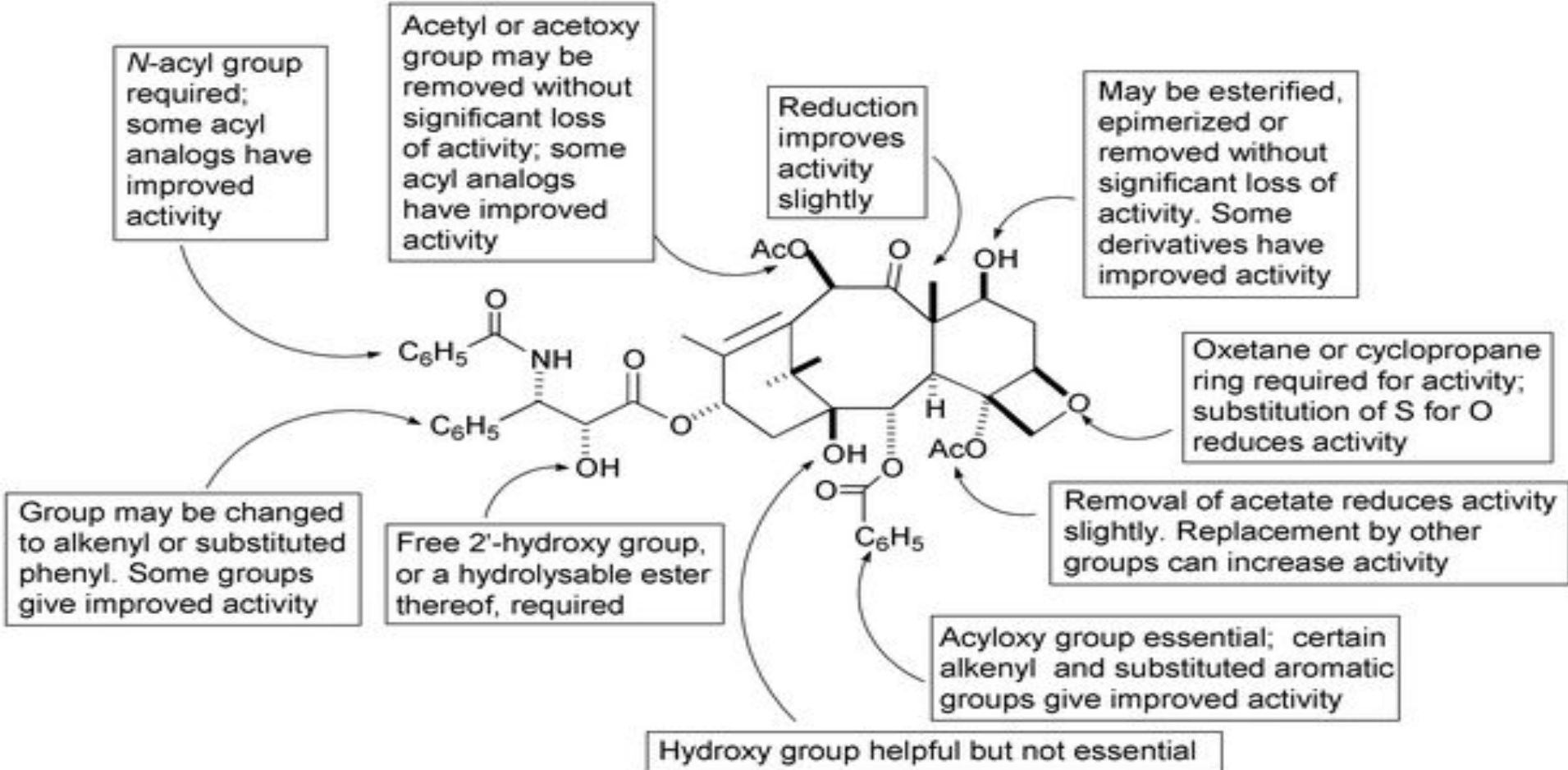


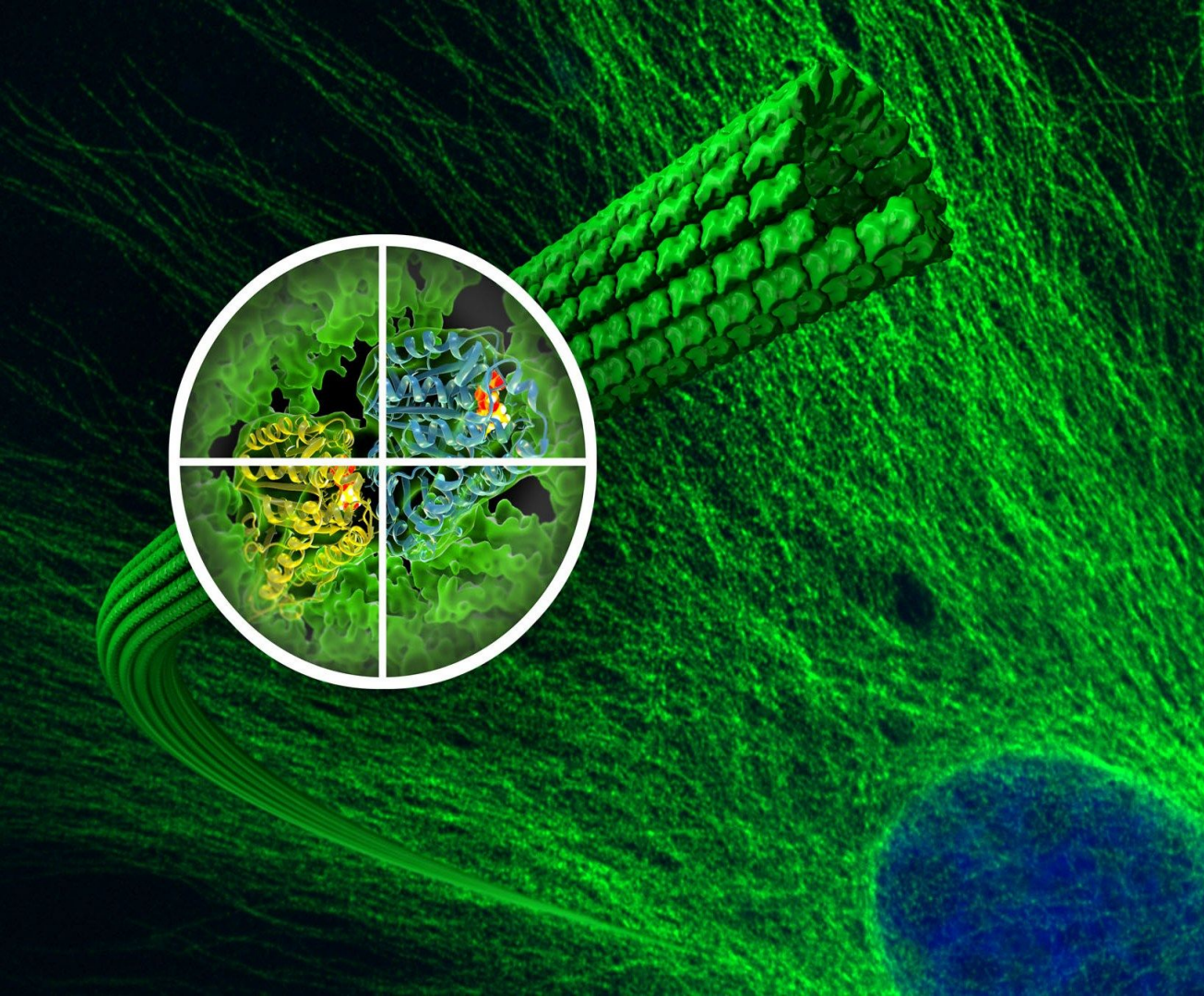


 AUC (area under the plasma concentration)

Pharmacokinetics of taxol

Pharmacophore of taxol





**Microtubules and How
the Anti-Cancer Drug
Taxol Works**