

TAXANES

Taxanes are best known for their cell growth blocking capabilities; taxanes are in a chemical group known as diterpenes, a family of structurally diverse compounds with fascinating biological activities¹. These compounds have high value in the human health field as they relate to anti-cancer therapies.



TAXANE FAST FACTS

- Taxanes are largely derived from natural sources, but can also be synthesized artificially. Paclitaxel (likely the best-known taxane) was isolated from the Pacific yew in 1971; twenty years later, docetaxel, a semi-synthetic taxane analogue, was identified from the European yew².
- Other than the yew tree, taxanes have been discovered in the leaves and shells of common hazel (*Corylus avellane*)³.

Predominant taxanes such as paclitaxel and docetaxel receive quite a lot of attention within the pharmaceutical industry. The journey of discovery of paclitaxel and other related compounds began in the United States in the 1960's. The National Cancer Institute (NCI) and U.S. Department of Agriculture (USDA) teamed up to search for possible anti-cancer therapies originating from both plant and animal materials⁴. The discovery of paclitaxel was groundbreaking in human medicine due to its success as a chemotherapy agent. The phytochemical is actually from the yew's bark. Unfortunately, harvesting the bark does kill the tree, so to combat this issue, synthetic and semisynthetic equivalents of the compound have been created.



TAXANE MVP'S

- **Paclitaxel:** the most notable taxane, paclitaxel is the generic name for Taxol, a drug approved by the Food and Drug Administration for the treatment of ovarian, breast and lung cancer⁵.
- **Docetaxel:** another member of the taxane family, docetaxel contains a different chemical structure than paclitaxel, which makes it more water-soluble⁶.

ChromaDex provides a number of chemical reference standards within the taxane family, including but not limited to: baccatin, cephalomannine, docetaxel, epitaxol, and many more. All members of the taxane family can be searched on ChromaDex's online catalog at chromadex.com/chromadex-catalog/

References

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