

Occurrence of Taxol and Related Taxanes in the Wood of Pacific Yew. John R. Obst,
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Maximizing the yield of taxol per tree is important for the best management of the yew resource. Therefore, the possibility of obtaining additional taxol from the wood was explored. Initial reports from our laboratory, in cooperation with the National Cancer Institute, indicated relatively high concentrations of taxol in Pacific yew heartwood. Although these taxol concentrations were only about 20% that of corresponding bark samples, the much greater mass of wood compared to bark indicated a potentially significant additional source of taxol. However, even through the initial results were replicated, subsequent analyses, conducted wholly at our laboratory, actually showed much lower taxol concentrations in heartwood. These results will be briefly reviewed and the source of the error will be discussed. Also, progress on the isolation of other taxanes from wood extracts will be described.

It had been reported by Russin (1992) that taxol occurs in bark in parenchyma cells, but apparently only in those cells that also contain tannins. The location of tannin and taxol could be coincidental, because these cells are repositories for secondary metabolites, or it could indicate an interaction between taxol and tannins. A nuclear-magnetic-resonance (NMR) experiment, using a tannin model, taxol, and a mixture of the two, did not indicate any strong interaction between taxol and the tannin model. However, the addition of tannic acid to an aqueous suspension of taxol increased the solubility of taxol in water by a factor of about 300. The tannic acid may have been a surface-active agent to increase water solubility.

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ABSTRACTS

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