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Anticancer chemotherapeutics like paclitaxel interfere with microtubule dynamics and prevent microtubules from forming correct mitotic spindles, which causes cell-cycle arrest and apoptosis. Cryptophycins are a class of 16-membered highly cytotoxic macrocyclic depsipeptides isolated from cyanobacteria [1]. The biological activity is based on their ability to interact with tubulin. Strong antiproliferative activities with 100- to 1000-fold increased potency compared to paclitaxel and vinblastine have been observed. Cryptophycins are highly promising drug candidates, since their biological activity is not negatively affected by P-glycoprotein, a drug efflux system commonly found in multdrug resistant cancer cell lines and solid tumors. Cryptophycin-52 had been investigated in phase II clinical trials, but failed because of its high neurotoxicity.

References

1. R. E. Schwartz et al., *J. Ind. Microbiol.* **1990**, *5*, 113-124.