Results: In comparison to control MCF7 cells, jadomycins G, DNV, B and A were equally toxic to ABCB1-overexpressing MCF7 cells; jadomycins DNV, SPG and N were equally toxic to ABCG2-overexpressing MCF7 cells; and only jadomycin N was equally toxic to ABCG2-overexpressing MCF7 cells. None of the jadomycin analogues inhibited the efflux of ABCB1, ABCG1 or ABCG2 probe substrates in transport assays.

Conclusion: The ability of jadomycins to retain cytotoxic activity in the corresponding drug resistant MCF7 cells stems from their ability to circumvent probesubstrates in transport assays.

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Poster Sessions


**Multidrug resistance to anticancer drugs is a major cause of chemotherapy failure in cancer patients. In efforts to find novel approaches to inhibit proliferation and induce apoptosis in lymphoma cells, we examined in both Hodgkin and non-Hodgkin lymphoma cell lines, the action of naturally occurring compound curcumin which is nontoxic and has a variety of therapeutic properties including anti-inflammatory, anti-microbial and anti-angiogenic activity.**

**Methods:** Both Hodgkin and non-Hodgkin cells were pre-treated with curcumin followed by exposure to doxorubicin or vincristine and the effect on cell growth was determined. Cytotoxic effects and determination of apoptotic attributes upon curcumin treatment were analyzed using flow cytometry assays.

**Results:** The current study demonstrates that curcumin has the ability to decrease cell viability and it is due to its capacity to decrease cell proliferation by causing cell cycle arrest in G2/M phase, and by inducing apoptotic cell death. Curcumin pre-treatment followed by exposure to doxorubicin or vincristine increased apoptosis as indicated by annexin V staining. It is shown that curcumin is much more effective on lymphoma cell lines in compare to doxorubicin or vincristine.

**Conclusion:** We have demonstrated that curcumin is an efficient inducer of apoptosis in lymphoma cell lines, merit its further evaluation in vivo. The observed effects combined with the well established pharmacological safety of curcumin, provide rationale for the potential use of curcumin as a new therapeutic agent for patients with Hodgkin and non-Hodgkin lymphomas.

**Uptake and Immunomodulatory Effect of Pegylated Liposomal Doxorubicin Nanoparticles on Human Macrophages**

**Material and Method:** Two PLD nanoparticles were used in this study. The major difference between Lipo-dox® (PLD-D) and Caelyx® (PLD-H) is that their phospholipid bilayers are composed of distearoyl phosphatidylcholine (DSPC) and hydrogenated soybean phosphatidylcholine (HSPC), respectively. Human CD14+ monocytes were isolated from peripheral blood to prepare macrophages for this study. Comparative assays included: flow cytometry for detection of doxorubicin penetration into cells, MTT for cell viability, Trypan blue exclusion for cell membrane integrity, Liu’s stain for morphologic evaluation, inactivated yeast co-culture for phagocytosis.

**Results and Discussion:** The uptake of PLD-D was rapidly detected at 10 min and kept increasing to 4 h followed by a decline thereafter, whereas that of PLD-H had similar profile with much less doxorubicin fluorescence detected, indicating a greater amount of doxorubicin retention of PLD-H. PLD-H, at higher concentration, decreased the viability and impaired cell membrane integrity of macrophages with an extent greater than PLD-D. The morphological observation showed a more extensive necrosis in PLD-H-treated macrophages. The phagocytosis function of macrophage was inhibited with a greater extent in PLD-H-treated macrophages.

**Conclusion:** To human macrophages, PLD containing HSPC may cause greater amount and longer retention of doxorubicin in cells, greater toxicity and more profound dysfunction than that containing DSPC. Whether this differential effect correlates to the clinical outcome needs to be extensively investigated by performing in vivo experiments or clinical trials.

**Discovery of a New Inhibitor of P53/MDM2 Interaction Using a Yeast Target-based Screening Strategy**

**Reference(s)**


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**Immunophenotype and CD99 Expression Patterns of Human Mesenchymal Stem Cells and Their Implication in Ewing Sarcoma**

**Introduction:** Ewing Sarcoma (ES) is a malignant tumor affecting mainly children and young adults. Sunburned, in bone and soft tissue and characterized by the presence of a chromosomal translocation responsible for the transcriptional deregulation of target genes such as the membrane receptor CD99. The origin of ES has long been the focus of intensive research, however, recently a Mesenchymal Stem Cell (MSC) origin has been assumed as the most probable.

Despite prior evidence suggesting a HMSC origin of ES, HMSC from ES patients have not been sufficiently investigated. Herein, we compared a large number of cells from ES patients with a representative normal MSC population.