

Comparative toxicological evaluation of nanoparticulate paclitaxel, liposomal docetaxel formulation and their standard drug formulations

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Abstract

In outbred rats a comparative toxicological evaluation of a nanoparticulate paclitaxel polylactide-based formulation, a liposomal docetaxel formulation and their standard drug formulations was conducted. Results of acute toxicity study revealed equivalent toxicity of standard and nanoscale formulations. Subchronic toxicity study showed a significant reduction in hematotoxicity, a decrease of cytotoxic effects on the thymus and the spleen (Fig. 2) for the nanoscale formulations [1,2].

References

[1]Comparative experimental toxicological study of taxane cytostatics and their nanosized drug formulations, Sedova S., Avdeeva O., Balabanyan V., Makarov V., Makarova M., Hamdy Y, Shvets V., Russian Biotherapeutic Journal, 4 (2013), 33-37

[2]Cytotoxic effect of paclitaxel incorporated in nanoparticles based on lactic and glycolic acid copolymer, Bojat V, Baranov DS, Oganesyanyan EA, Hamdy YM, Balaban'yan VY, Alyautdin RN., Bulletin of Experimental Biology and Medicine, 3 (2011), 340-343

Figures

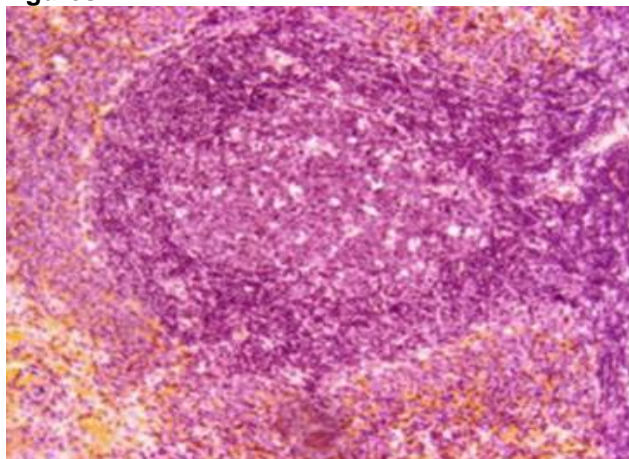


Fig.1. Intact rat spleen x200

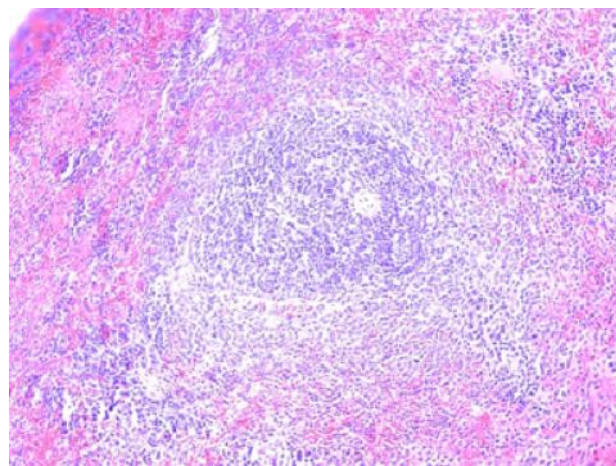


Fig. 2. Rat spleen - nanoparticulate taxane formulations (mild signs of reduction of lymphoid tissue). x200

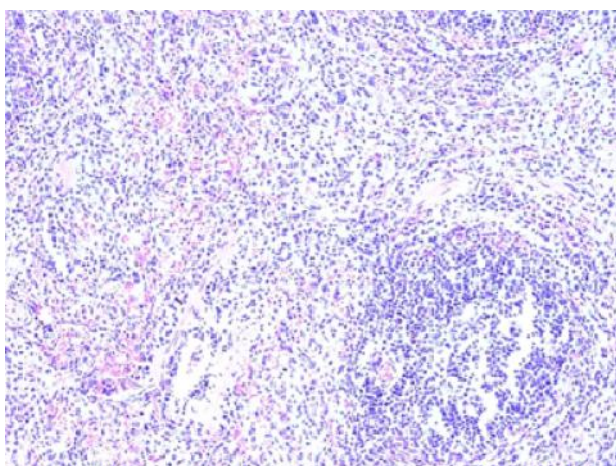


Fig. 3. Rat spleen – standard taxane formulations (significant reduction of lymphoid tissue) x200