

## **Effect of Recombinant Human Erythropoietin and Bovine Lactoferrin on Canine Mammary Gland Tumor Cell**

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### **Abstract**

Adjuvant chemotherapy is recommended for metastatic canine mammary gland tumor. Erythropoietin receptors (EPOR) was once thought to be only expressed on the surfaces of the erythroid progenitor cells. Recently, EPOR have been identified in several neoplastic cell lines and solid tumors including human and canine mammary gland tumors. Bovine lactoferrin (bLF) has several biological activities, including anti-tumor effect on some human and animal tumors. Clinical trials have been carried out in human medicine based on these effects. In this *in vitro* study, doxorubicin, recombinant human erythropoietin (rHuEPO) and bLF were used separately and in combination in order to determine the effect of different drugs on canine mammary gland tumor. Recombinant human erythropoietin was found to have a non-significant effect on the canine mammary gland tumor cell line. Doxorubicin alone gave a more promising result in cytotoxic effect of the cells in a dose-dependent manner. Bovine lactoferrin however did not show a clear anti-proliferative pattern on the tumor cells. The drug combination treatment did not show better anti-proliferative or cytotoxic effect on the cells than doxorubicin alone. The combination of these drugs induced growth arrest at G<sub>2</sub>/M phase.

**Keywords:** canine mammary gland tumor, erythropoietin, bovine lactoferrin, doxorubicin