ID: 51 **CHEMOTHERAPEUTIC POTENTIAL OF LIPOXINS IN KAPOSI'S SARCOMA AND PRIMARY EFFUSION LYMPHOMA**

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Current treatments for Kaposi's Sarcoma (KS) and Primary Effusion Lymphoma (PEL) rely on systemic chemotherapeutics developed for non-virus-associated cancers that target DNA replication of all dividing cells. Other treatment methods aim at keeping immune system healthy and infection under control through surgery. All of the above approaches have low efficacy, high cost, and high risk of secondary malignancies especially in immuno-compromised patients. Hence, there is an emerging need to look for alternative treatment focused on KS or PEL host molecules, such as **Lipoxins.** Lipoxins are anti-inflammatory molecules that can target a variety of pro-inflammatory pathways of KS and PEL. Previous results from our lab have shown that level of ALX receptor (ALXR) does not change after Kaposi's Sarcoma Herpes Virus (KSHV) infection, leading

to the potential use of Lipoxins to trigger anti-inflammatory and pro-apoptotic pathways as treatment of KS and PEL.

In this study, we investigated downstream signaling in KSHV harboring body cavity B cell lymphoma (BCBL-1) cells induced by Lipoxin treatment to assess its pro-apoptotic effect. We treated $5–10\times10^6$ BCBL-1 cells with solvent control (EtOH), Lipoxin (100 mM), or Epilipoxin (100 mM) for 48 and 72 hrs. Downstream phosphorylation of Akt, NF-kB p65, and ERK were assessed using Western blotting and pro-apoptotic gene changes were detected using Real-Time PCR. Cell survival and cell cycle progression was assessed using BrdU FACS analysis. We found that Lipoxin and Epilipoxin treatment downregulated NF-kB and ERK activation via ALXR binding while Akt signaling was not affected. We also found that Lipoxin successfully upregulated pro-apoptotic genes such as BIM-1, BAX, BCL-10, and p53 compared to control. Lipoxin treatment also led to decreased S-phase progression and induction of apoptosis. In conclusion, our study suggests that Lipoxins have therapeutic potential for PEL and should be explored in KS and other PEL cell types.