Insights on the Molecular Mechanisms Underlying the Anticancer Activity of Lactoferrin in Metastatic Cancer Cell Lines [P7/30]

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Lactoferrin (Lf) is an iron-binding protein derived from milk that is present in many tissues and biological fluids. It has been shown that this natural compound exihibits anticancer and anti-metastatic activities as well as cytotoxicity against several cancer cell lines. We have recently found that bovine lactoferrin (bLf) selectively triggers cell death in highly metastatic breast cancer cells through inhibition of the plasmalemmal proton pump V-H+-ATPase.1 In the present study we aim to determine whether this mechanism of action underlies the anticancer/anti-metastatic activity of bLf in metastatic cancer cells other than breast cancer cells. To this end, we assessed bLf-induced inhibition of cell proliferation and intracellular acidification of a prostate and an osteosarcoma metastatic cell line and compared it with the effects on the previously used metastatic breast cancer cell line. The possibility of a common molecular target/mechanism of action of bLf underpinning its anticancer/anti-metastatic activity will be discussed.

References:

1. Cátia S. Pereira, Joana P. Guedes, Marília Gonçalves, Luís Loureiro, Lisandra Castro, Hernâni Gerós, Lígia R. Rodrigues, Manuela Côrte-Real: Lactoferrin selectively triggers apoptosis in highly metastatic breast cancer cells through inhibition of plasmalemmal V-H+-ATPase. Oncotarget 2016, 1-15.

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