

Journal: Animal Model and Experimental Medicine, Vol. 2, pp 291-296, 2019

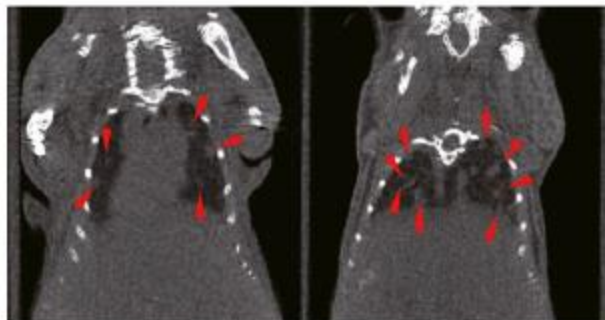
Authors: Li M et al.

Title: Downregulation of HNRNPK in human cancer cells inhibits lung metastasis

Link: <https://doi.org/10.1002/ame2.12090>

Keywords: Lung cancer, biomarkers, metastatic cancer

Summary: Identification of new diagnostic and therapeutic markers are significant in both early detection and successful treatment of lung cancer. HNRNPK is an RNA and DNA binding protein that plays an important role in cell homeostasis. It is a known coactivator of the p53 tumor suppressor protein and regulates repair of damaged DNA. Overexpression of HNRNPK has been found in lung cancers and is associated with poor prognosis. In this study, the authors developed a human lung cancer cell line (A549) with downregulated HNRNPK. Using this cell line, they further developed an animal model of lung cancer to study the effects of HNRNPK downregulation on tumor development. HNRNPK downregulation was induced by treatment with doxycycline for 1 week after cell injection and metastatic tumor development assessed in vivo with CT imaging.



sh-HNPMPK

sh-NC

The authors used the InSyTe FLECT/CT to assess the development of metastatic tumors from HNRNPK downregulated (sh-HNRNPK) and control (sh-NC) A549 cells. The arrows point to individual metastases, indicating the HNRNPK downregulated tumors developed fewer metastases.

InSyTe FLECT/CT Spotlight: Using the CT system on the InSyTe FLECT/CT, the research team visualized the formation of metastatic lung tumors from A549 lung cancer cells with doxycycline induced HNRNPK downregulation (sh-HNRNPK) and control (sh-NC). The acquired CT images show more metastases in the control A549 cells, suggesting the role of HNRNPK in regulating metastasis and tumor progression, and as a potential therapeutic target. While these preliminary results are promising, more studies are needed to better understand the role of HNRNPK downregulation in tumor progression. The research team was able to non-invasively visualize lung tumors without requiring the use of contrast agents due to the superior soft tissue CT imaging capabilities of the InSyTe FLECT/CT.