# Investigating abeerations responsible for the MHC class I pathway altered expression in oesophageal adenocarcinoma

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Abstract

Oesophageal cancer is the sixth leading cause of cancer death worldwide. For the majority of patients with advanced tumour, curative therapies become inefficient and have a high rate of relapse underpinning the need for new therapeutic strategies.

The down-regulation of the MHC class I antigen presentation pathway is a well-established mechanism of tumour immune escape. It has been observed in different types of tumours and plays a critical role in host responses to cell transformation leading to the establishment of an immunosuppressive microenvironment and facilitating the metastatic spread of cancer cells.

In this study we investigated the HLA class I molecules expression pattern in oesophageal adenocarcinoma (OAC), its prognostic value for patients undergoing immunotherapy treatment. Using immunohistochemical analysis, the HLA-B downregulation was characterized in patients with different clinical stages of oesophageal adenocarcinoma. We observed a correlation between the expression of MHC class I molecules and components of The Interferon-Related DNA-damage Resistance Signature (IRDS) pathway, particularly the pro-metastatic receptor IFITM1, associated with the development of radiation resistance and proliferative signalling in tumour.

Our aim is to understand the mechanism underlying the loss of MHC class I in tumour with respect to interferons stimulated signaling pathways and specific focus on IFITM1 receptor. The characterization of MHC class I downregulation may lead to better understanding of cancer immunoediting process and will help to facilitate the immunotherapeutic strategies for patients with oesophageal cancer.