Eduardo Osinaga et al., J Glycobiol 2017, 6:2(Suppl)
DOI: 10.4172/2168-958X-C1-009

Polypeptide GalNAc-transferase-13 shows independent prognostic impact in adenocarcinoma lung cancer patients treated with neoadjuvant chemotherapy

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Lung cancer is currently the leading cause of cancer-related death worldwide, accounting for approximately a third of all cancer diagnoses and related-deaths. Non-small cell lung cancer (NSCLC) represents nearly 80% of lung tumors; the two most common NSCLC histological types are squamous cell carcinoma (SCC) and adenocarcinoma (ADCA). Several diagnosis procedures detecting altered glycosylation have been developed and incorporated as assistant procedures in clinical oncology. The synthesis of mucin-type O-glycans is started in a reaction catalyzed by UDP-N-acetyl-D-galactosamine:polypeptide N-acetylgalactosaminyltransferases (GalNAc-Ts). This is a complex family of enzymes of at least 20 members in humans. We previously found that *GALNT13*, the gene encoding GalNAc-T13 isoenzyme, is a strong predictor of poor clinical outcome in neuroblastoma patients. In the present study, we evaluated GalNAc-T13 expression in human NSCLC. We produced a monoclonal antibody (MAb T13.5) that was used to assess the expression profile of the GalNAc-T13 protein in a well-defined population of 443 surgically resected NSCLC patients with 7 years of follow-up. We found that ADCAs expressed higher levels of the enzyme than SCCs. GalNAc-T13 expression correlated significantly with worse overall survival in ADCA patients treated with neoadjuvant chemotherapy. These data suggest that GalNAc-T13 could be a novel marker associated to chemoresistance in lung adenocarcinomas.

Biography

Eduardo Osinaga is a Medical Doctor and completed his PhD at the Technological University of Compiègne, France. He is the Director of the Laboratory of Glycobiology and Tumor Immunology at Pasteur Institut, Montevideo and is the Head of the Department of Immunobiology, Faculty of Medicine, Montevideo, Uruguay. His major research interest is the glyco-immunology of cancer. He has published more than 75 papers in reputed journals.

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