Human Kallikrein 10 (hK10, Normal Epithelial Cell-specific 1, NES1) is a New Prognostic Biomarker for Ovarian Carcinoma. Liu-Ying Luo, Dinos Katsaros, Andreas Scorilas, Stefano Fracchioli, Marco Massobrio, and Eleftherios Diamandis. Dept. of Gynecology, Gynecologic Oncology Unit, University of Turin, Turin, Italy, Mount Sinai Hospital, Toronto, ON, Canada, and University of Toronto, Dept. of Lab Medicine and Pathobiology, Toronto, Canada.

Human Kallikrein 10 (hK10, Normal Epithelial Cell-specific 1, NES1) is a secreted serine protease with unknown physiologic function. It is mostly expressed in ovarian tissue. To evaluate the possibility of hK10 as a biomarker for ovarian cancer, we investigated the correlation of hK10 protein level in cancerous ovarian tissue extracts with different clinico-pathological variables documented at the time of surgery and with outcome (progression free survival [PFS] and overall survival [OS]) monitored over a median interval of 60 months. The amounts of hK10 protein in ovarian tissue extracts were determined with a highly sensitive and specific immunoassay for hK10. Totally, 182 ovarian tumor tissue extracts were measured. Positive hK10 expression (>1.35 ng/L) was associated with late stage disease, serous histotype, residual tumor > 1 cm (all P value is less than 0.05). There was no relationship with grade, menopause status, and response to chemotherapy. Univariate analysis with regard to PFS and OS revealed that patients with hK10 positive were more likely to have progressive disease and to die than those with hK10 negative (hazard ratio is 1.33 (P=0.017), 2.42 (P=0.014), respectively, estimated with Cox proportional hazard regression model). Survival curves also showed that the patients with hK10 positive relapsed more frequently and died more quickly than those with hK10 negative (P=0.014, 0.008, respectively). When the entire database was adjusted for tumor grade, residual tumor, histologic type, and age and subjected to multivariate analysis, hK10 remained to be an independent prognostic marker in a subgroup of patients with stage III disease (P=0.031). Survival curve analysis with regard to PFS and OS in this subgroup of patients showed the same results (P=0.014, 0.021, respectively). Our results indicate that hK10 may constitute a new prognostic marker for ovarian cancer, especially for patients with late stage disease.