Human kallikreins 6 and 10 (hK6 and 10) are immunohistochemically expressed in all cell types of the colorectal mucosa. It has been suggested that members of the human kallikrein gene family may represent candidate cancer diagnostic/prognostic markers for various cancers. The prognosis of patients (pts) with colorectal cancer (CRC) is mainly assessed by using conventional clinical and pathological factors. The aim of this study was to investigate the immunohistochemical expression (IE) of the above hKs in CRC, to correlate this IE with various histopathological and clinical variables and to evaluate their significance in terms of disease outcome, and in making therapeutic decisions.

Included in the study were 120 pts, 68 males and 52 females, median age 70 (41-91) years, who underwent partial colectomy for CRC. Eighty-six/120 (72%) CRCs were well or moderately differentiated (low grade) and 34/120 (28%) were poorly differentiated (high grade) tumors, respectively. Twenty-three/120 (19%) CRCs were confined to the intestinal wall (pT1 and pT2) and 97/120 (81%) invaded the pericolic fat (pT3), respectively. Regional lymph nodes metastasis (LNM) and liver metastasis (LM) status was available in 102/120 and in 66/120 cases, respectively. LNM was observed in 59/102 (58%) and LM in 11/66 (17%) of cases, respectively. Follow-up information was available for 53/120 pts. The median follow-up period was 27 (2-35) months. Death was observed in 11/53 (21%) pts. The immunohistochemical method of streptavidin-biotin-peroxidase using anti-hK6/10 polyclonal antibodies was performed. In CRC, the IE of the two hKs was decreased in relation to the IE of normal colon mucosa: 72/120 (60%) of cases were positive for hK6 and 68/120 (57%) for hK10, respectively. A statistically significant (ss) negative association was observed between hK10 IE and tumor differentiation (p=0.031). No ss difference was observed between hK6 IE and grade as well as between the IE of both hKs and tumor size, intestinal wall invasiveness, LNM and LM respectively. Kaplan-Meier survival curves showed that hK10 IE had ss relation with overall disease-specific survival (p=0.0142). Multivariate analysis showed that tumor size, high grade, LM and hK10 IE were independent unfavorable predictors for overall disease-specific survival (p=0.002, p=0.004, p=000 and p=0.001, respectively). In conclusion hK10 IE may significantly contribute to disease outcome prediction in patients with CRC.