Background: V-set and immunoglobulin domain containing 1 (VSIG1) is a cell-cell adhesion molecule considered specific for gastric carcinomas [1]. Scarce data are known about its possible use as marker of gastric differentiation, in other tumors [2] or its positivity for soft tissue malignancies [3]. No data about correlation between gene and protein expression in colorectal cancer (CRC) were published to date. It was even suggested that VSIG1 does not mark colorectal carcinoma cells [1]. The aim of the paper was to firstly prove in literature the possible association between the gene and protein expressions of VSIG1 in CRC.

Methods: In 77 CRCs the protein expression of VSIG1 (polyclonal; Sigma-Aldrich), and p53 (ready to use, Agilent) was examined immunohistochemically (IHC) using formalin-fixed paraffin-embedded tissues. Gene expressions of VSIG1 and TP53 were also analyzed after RNA isolation from fresh tissue samples stored at -80°C. A relative quantitation (RQ) value RQ>1 was considered highly expressed whereas RQ<1 was used to identify low gene expressions for VSIG1 and TP53. No cases with preoperative oncologic therapy were included..

Results: VSIG1 was highly expressed in 44/77 cases (gene level) whereas 18/77 CRCs presented IHC membrane or nuclear positivity. A low VSIG1 gene expression level was associated with complete loss of IHC positivity for VSIG1 (p=0.001). Although no association between the level of the two examined genes was found (p=0.21), most of the cases showing p53≤50% associated low VSIG1 expression (p=0.008). Half of the IHC positive cases presented KRAS-mutations (9/18) compared with only 32.20% (19/59) from the VSIG1-negative group. From the 21 carcinomas of the rectum, 19 showed complete IHC loss of VSIG1. No association was seen between VSIG1 and tumor stage (p=0.34), budding degree (p=0.57), microsatellite status (p=0.89) or survival rate. Although not specific, all plasmacytoid carcinomas diffusely express VSIG1 (Fig. 1)

Conclusions: The present data firstly proved that loss of IHC positivity of VSIG1 seems to be more frequent in the carcinomas of the rectum, especially in Kras-wild type cases. Loss of positivity might be the expression of a low gene expression level but the clinical implications are far to be understood.

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References: