CD10 in renal tumors

In this retrospective study, we have tested the CD10 antibody (CD10 II.,DB-057, Lot: DB057-01-02A), developed by DB Biotech, on the set of 60 renal tumors, to see the sensitivity of the antibody. Whole block sections were used.

Cases were retrieved by random selection from files of the Department of pathology. Four major histological types were selected for the study, namely oncocytoma, chromophobe renal cell carcinoma, papillary renal cell carcinoma (type 1 and 2) and conventional clear cell carcinoma.

Methods

Tissue specimens were cut into 3-4 µm thick sections and mounted on silanized slides, deparaffinized in xylene (3 x 10 min), rehydrated in benzylalcohol (3 x 10 min) and washed in distilled water (DW, 2 x 5 min). Endogenous peroxidase activity was blocked by immersion in 3% hydrogen peroxide solution, slides were than washed in DW (2 x 5 min). Antigen retrieval was performed by HIER in water bath (95-98℃) in Tris/EDTA buffer pH 9,0 (30 min). After cooling (15-20 min) and washing slides in DW (2 x 5 min) and PBS buffer (2 x 2 min), primary antibody (CD10 II.,DB-057, Lot: DB057-01-02A) was applied for 1 hour (humid chamber, ambient temperature). After washing in PBS buffer (3 x 5 min), secondary antibody (EnVision+, Dual Link System - HRP) was applied for 30 min. Washing in PBS buffer followed (3 x 5 min) and diaminobenzidine (DAB) was used as chromogen. Standard finishing with hematoxylin counterstaining and mounting in aqueous medium followed.

Results of the staining were scored as negative, weakly positive (1+) or strongly positive (2+ / 3+). The case was considered positive regardless of the intensity or extent of the staining (1+, 2+, 3+, focal or diffuse). Only luminal / membranous linear positivity was considered as specific.

Results

From the sixty cases, results of the immunostaining was evaluable in all cases, with no disturbing background staining.

From eight oncocytoma cases, seven were CD10 negative and one case was focally positive, with moderate to strong positivity (2+/ 3+) (**Figure 1**).

Half of the chromophobe carcinomas (6/12) were negative, two cases were weakly (1+) positive and four cases were 2+ / 3+ positive (**Figure 2**).

Eleven papillary carcinomas scored negative and eight cases were CD10 positive (four 1+ and four 2+ / 3+) (**Figure 3**).

Majority (19 / 21) of the conventional clear cell carcinomas were 2+ / 3+ positive, with only two negative cases (one of them was sarcomatoid carcinoma) (**Figure 4**). The staining was focal in majority of the tumors. The summary of the staining is in the table.

Histological type	No. of cases	CD10 negative	CD10 1+	CD10 2+/3+
Oncocytoma	8	7	0	1
Chromophobe RCC	12	6	2	4
Papillary RCC Type 1	11	7	2	2
Papillary RCC Type 2	8	4	2	2
Conventional CCRCC	21	2	0	19

Figure 1

Most oncocytoma were CD10 negative (left). One case was focally positive with moderate to strong positivity (right).

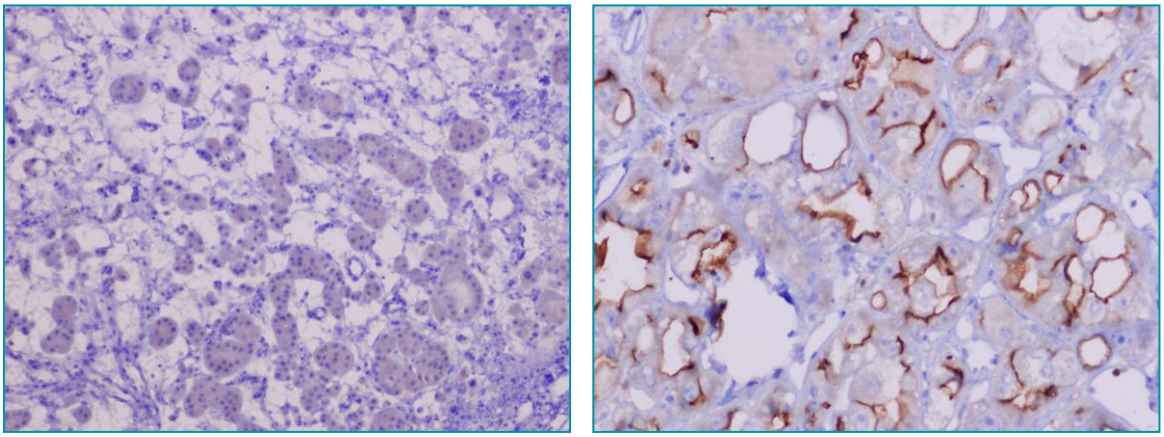


Figure 2

Half of the chromophobe carcinomas were negative (left), other cases showed variable positivity, 3+ in this case (right).

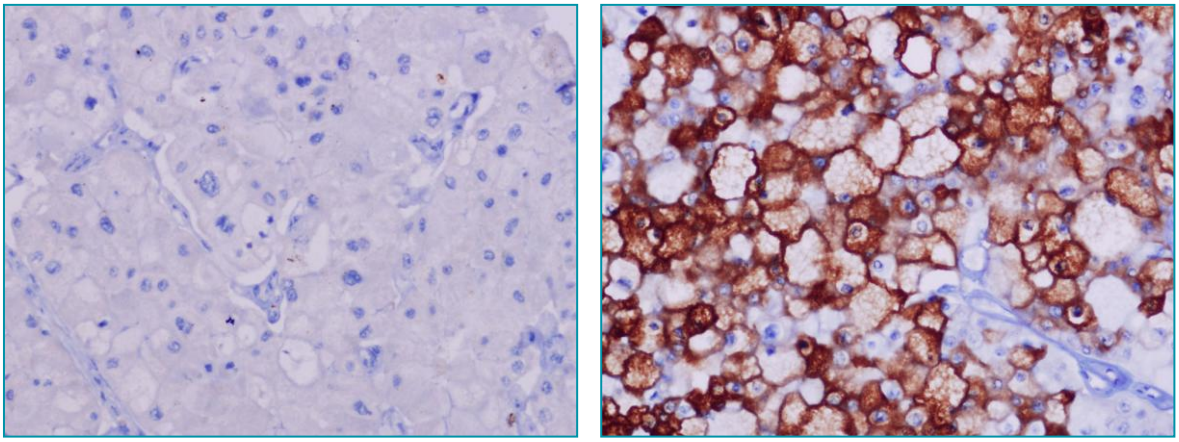


Figure 3

Approximately 40% of the papillary renal cell carcinomas were CD10 positive.

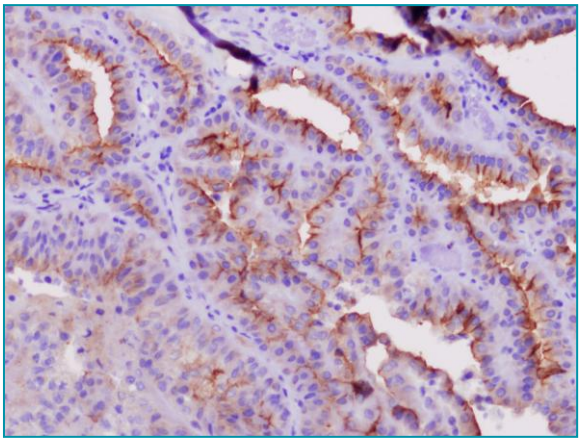
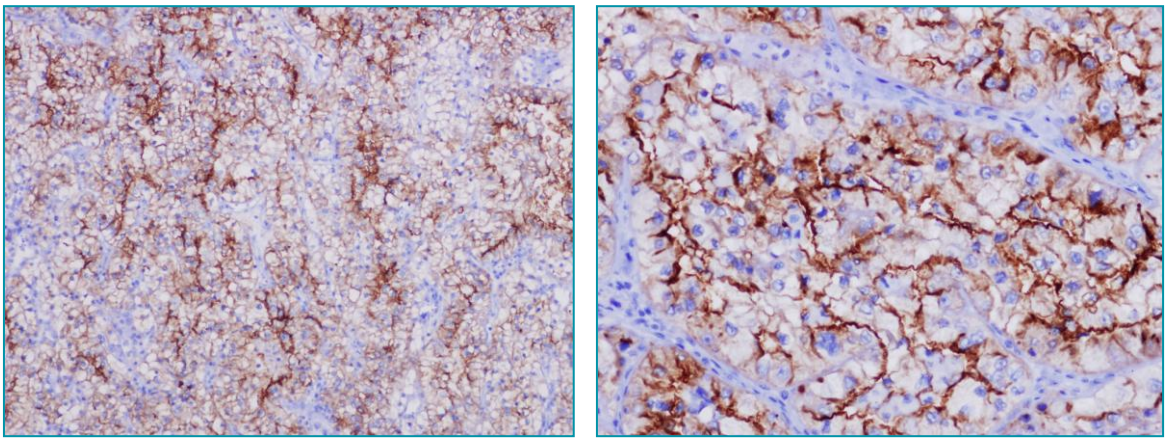


Figure 4

Majority of conventional clear cell carcinomas were moderately to strongly positive.



Conclusion

In a limited number of cases, we have shown that DB Biotech CD10 antibody has modest sensitivity for chromophobe and papillary renal cell carcinoma and excellent sensitivity for conventional clear cell renal cell carcinoma. These results are in accordance with the data found in the literature. When used in appropriate panel of antibodies, this antibody would be very useful for confirmation of the renal cell carcinoma diagnosis in the primary as well as metastatic setting.

Literature:

Netto JG, Epstein JI: Immunohistology of the prostate, bladder, kidney, and testis. In: Dabbs D, ed. Diagnostic immunohistochemistry. Theranostic and genomic applications (3rd ed). Philadelphia: Saunders, 2010: 593-661.