

# Loss of nuclear BAP1 protein expression is a marker of poor prognosis in patients with clear cell renal cell carcinoma

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BAP1 is a gene situated on chromosome 3p in a region that is deleted in over 90% of Renal Cell Carcinomas (RCCs) (1,2). In the present study we studied BAP1 immunohistochemical expression in a large series of conventional clear cell RCCs (ccRCCs) treated with radical nephrectomy and we assessed the prognostic value of their expression in terms of patients survival at long-term follow-up. 154 consecutive patients with ccRCC were selected from a prospective database and considered for the study purpose; all patients were treated with radical nephrectomy and lymphadenectomy at our Institute of Urology between 1983 and 1985. The features considered in this study were tumor size, grade and stage, vascular and capsular invasion, incidence of metastasis and patient specific survival; all these parameters were correlated with immunohistochemical cytoplasmic and nuclear expression of BPA-1 in tumoral tissue. Median follow-up was 196.18 months (range 5 to 274); median survival was 125.34 months (range 5 to 274 months). We found that nuclear BAP1 expression showed a high frequency of loss in tumoral cells; nuclear BAP1 negative tumors had higher tumor size, higher Fuhrman grade, and higher stage, a greater amount of vascular and capsular invasion and a higher incidence of metastases. We have demonstrated that nuclear BAP1 expression is a marker of prognosis in ccRCC, having an impact on cancer-specific survival. The clinical importance for BAP1 will be realized with the identification and application of targeted therapies and with individualized approaches in the adjuvant and/or metastatic setting.

## References

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## Keywords

BAP1 protein; clear cell renal cell carcinoma; immunohistochemistry; cancer-specific survival.