

# Spotlight On:

Rev. 0.1

## S100A1 (EP184\*)

**T**umors of renal epithelial cells can be diagnostically challenging. The differential diagnosis includes neoplasms of the kidney, bladder, and prostate as well as renal neoplasm subtypes. Renal oncocytoma is a benign tumor of the kidney. Renal oncocytomas morphologically mimic chromophobe renal cell carcinoma and these two neoplasms need to be differentiated from each other, which can pose a challenge. Immunohistochemistry plays a critical role in this distinction. Markers such as ksp-cadherin, carbonic anhydrase IX, parvalbumin, and PAX-2 assist in identifying these subtypes of renal neoplasms, but none demonstrate confirmatory staining specifically for renal oncocytoma.

S100A1 is a calcium-binding protein that is a member of the S100 family. S100A1 demonstrates staining in the majority of renal oncocytomas, clear cell renal cell carcinomas, and papillary renal cell carcinomas, while chromophobe renal cell carcinomas do not express S100A1.<sup>1</sup> When used in a panel with cytokeratin 7, S100A1 is able to distinguish renal oncocytoma from chromophobe renal cell carcinoma with a sensitivity of 91% and specificity of 93%.<sup>2</sup> S100A1 is incorporated in a panel with PAX-8, PSA, p63, and CEA to differentiate nephrogenic adenoma from its mimics of prostatic and urothelial origin.<sup>3</sup>

### Benefits of S100A1:

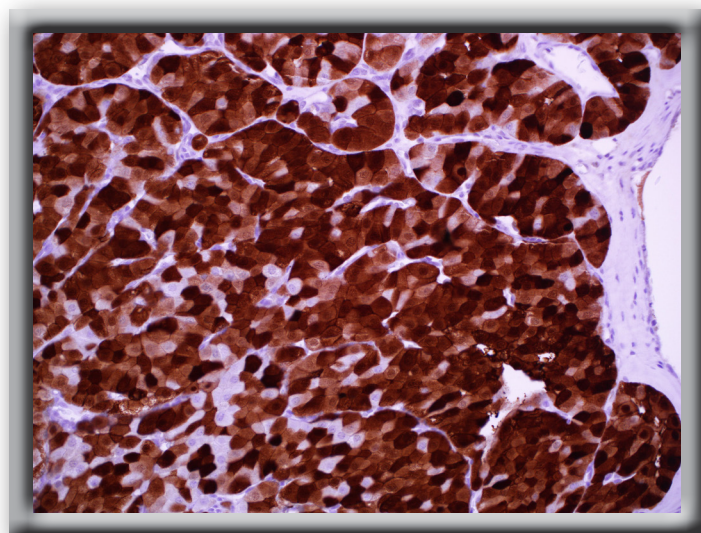
- *In vitro* diagnostic
- Distinguishes renal oncocytoma from chromophobe renal cell carcinoma
- Helps to distinguish nephrogenic adenoma from mimics when used in a panel

1. Li G, et al. Histopathology. 2007 Apr; 50(5):642-7.
2. Carvalho JC, Histopathology. 2011 Jan; 58(2):169-79.
3. Quinones W, et al. Ann Diagn Pathol. 2013 Feb; 17(1):41-4.

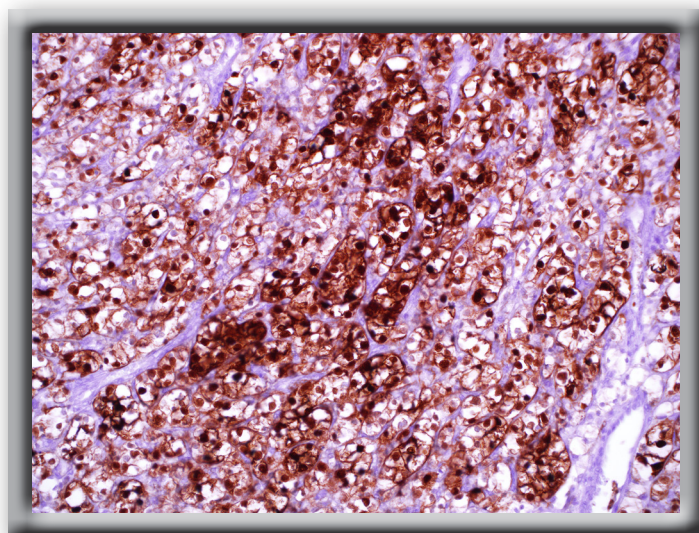
### Ordering Information:

0.1 ml concentrate .....	408R-14
0.5 ml concentrate .....	408R-15
1 ml concentrate.....	408R-16
1 ml predilute.....	408R-17
7 ml predilute.....	408R-18
5 positive control slides .....	408S

\* Rabbit monoclonals produced using technology from Epitomics, Inc. under Patent No. 5,675,063.



*S100A1 decorates oncocytoma cells in nuclear and cytoplasmic location.*



*Clear cell renal cell carcinoma expresses S100A1 protein.*