**Supplementary table 1. Immunohistochemical protocols**

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|  | **Antibody** | **Place** | **Platform** | **Antibody company/clone** | **Dilution** | **Pre-treatment** | **Interpretation** |
| **1** | AE1/AE3 | CLS  | Dako Omnis | Monoclonal mouse. Dako, cloneAE1/AE3 | Ready-to-use  | 30 min HIER  | Negative: Absence of stainingPositive: Any staining ≥ 1% of tumor cells |
| 2 | WT-1 | CLS | Dako Omnis | Monoclonal mouse. M. Leica Biosystems, Clone WT41 | 1:40  | 30 min HIEP | Negative: Absence of stainingPositive: Any staining ≥ 1% of tumor cells |
| 3 | p53 | CLS | Dako Omnis | Monoclonal mouse. Dako, Clone DO-7 | Ready-to-Use | 30 min HIER | Wild type: Heterogeneous nuclear staining between ≥ 1% and < 70%Abnormal: Complete absence of nuclear staining in presence of internal control or diffuse nuclear staining in ≥ 90% of tumor cells |
| 4 | Napsin-A | CLS | Dako Omnis | Monoclonal mouse. M. Leica Biosystems, Clone IP64 | 1:400 | 30 min HIER | Negative: Absence of stainingPositive:Positive: Any staining ≥ 1% of tumor cells |
| 5 | PR | CLS | Dako Omnis | Monoclonal mouse. Dako, clone PgR 1294 | 1:50 | 10 min HIER | Negative: Absence of stainingPositive: Any staining ≥ 1% of tumor cells |
| 6 | ER | CLS | Dako Omnis | Monoclonal rabbit. Thermofisher, clone SP1 | 1:50 | 20 min HIER | Negative: Absence of stainingPositive: Any staining ≥ 1% of tumor cells |
| 7 | P16 | CLS | Dako Omnis | Monoclonal mouse. CINtech,clone E6H4 | Ready-to-Use | 30 min HIER | Normal staining: Patchy/ heterogeneous staining Abnormal staining: Complete absence of staining or Block staining ≥ 95% of tumor cells |
| 8 | Vimentin | CLS | Dako Omnis | Monoclonal mouse. Dako, clone V9 | Ready-to-Use | 30 min HIER | Negative: Absence or focal in <50% of tumor cellsPositive: Diffuse staining ≥ 50% of tumor cells |
| 9 | PAX8 | CLS | Dako Omnis | Monoclonal mouse. Cell Marque. Sigma-Aldrich, clone MRQ-50 | Ready-to-Use | 10 min HIER | Negative: Absence of stainingPositive: Any staining ≥ 1% of tumor cells |
| 10 | Inhibin | CLS | Dako Omnis | Monoclonal mouse. Dako, clone R1 | Ready-to-Use | 20 min HIER | Negative: Absence of stainingPositive: Any staining ≥ 1% of tumor cells |
| 11 | Melan A  | CLS | Dako Omnis | Monoclonal mouse. Dako, clone A103 | Ready-to-Use | 20 min HIER | Negative: Absence of stainingPositive: Any staining ≥ 1% of tumor cells |
| 12 | OCT-4 | CLS | Dako Omnis | Monoclonal mouse. Cell Marque. Sigma-Aldrich, clone MRQ-10 | Ready-to-Use | HIER | Negative: Absence of stainingPositive: Any staining ≥ 1% of tumor cells |
| 13 | Glypican 3 | CLS | Dako Omnis | Monoclonal mouse. Cell Marque. Sigma-Aldrich, clone IG12 | Ready-to-Use | HIER | Negative: Absence of stainingPositive: Any staining ≥ 1% of tumor cells |
| 14 | PMS2 | CLS | Dako Omnis | Monoclonal rabbit. Dako, clone EP51 | 1:40 | 20 min HIER | Loss: Absent nuclear staining in tumor cells with positive staining in stromal and lymphocytesRetained: Any positive (>10%) nuclear staining in tumor cells |
| 15 | MSH6 | CLS | Dako Omnis | Monoclonal rabbit. Dako, clone EP49 | 1:50 | 20 min HIER | Loss: Absent nuclear staining in tumor cells with positive staining in stromal and lymphocytesRetained: Any positive (>10%) nuclear staining in tumor cells |
| 16 | FOXL2 | Vancouver  | Ventana Benchmark | Polyclonal goat, Imgenex, San Diego, CA | 1:25 | 10 min HIER | Negative: Absence of stainingPositive: Any staining ≥ 1% of tumor cells |
| 17 | TTF3 | APRL | Dako Omnis | Monoclonal mouse. Abnova, Clone 3D9 | 1:50 | 20 min HIER | Negative: Absence or focal in <50% of tumor cellsPositive: Diffuse staining ≥ 50% of tumor cells |
| 18 | ARID1A | APRL | Dako Omnis |  Polyclonal rabbit. Sigma-Aldrich, clone  | 1:500 | 10 min HIER | Loss: Absent nuclear staining in tumor cells with positive staining in stromal and lymphocytesRetained: Retained staining in ≥ 10% of tumor cells  |
| 19 | SATB2 | APRL | Dako Omnis | Monoclonal rabbit. Abcam clone EPNCIR130A | 1:800 | 30 min HIER | Negative: Absence of stainingPositive: Any staining ≥ 1% of tumor cells |
| 20 | BRG1 | APRL | Dako Omnis | Monoclonal rabbit. Abcam, clone EPNCIR111A  | 1:50 | 20 min HIER | Loss: Absent nuclear staining in tumor cells with positive staining in stromal and lymphocytesRetained: Any positive (>5%) nuclear staining in tumor cells |