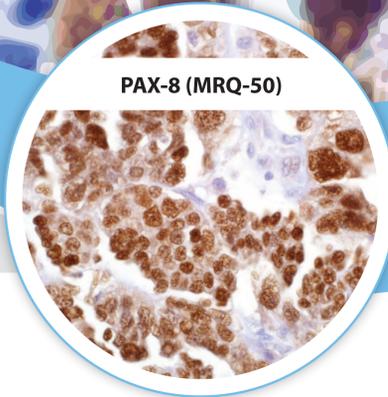


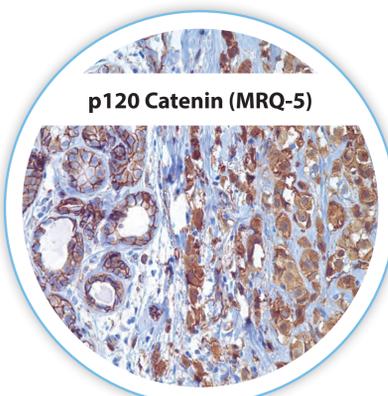
Organ Specific

In the last decade, many new antibodies have been identified/characterized to targets that have led to applications in a particular organ or organ system. Along with these developments, new applications of more established antibody products have been discovered. It is with this in mind that Cell Marque presents the data below in table form for quick reference. Please be mindful of the fact that a '+' sign does not indicate that the antibody reacts with all of the tumors in a particular category and that a '-' sign does not mean that all tumors are negative for the indicated antibody. These indications are based on a preponderance of data in the literature. It must be kept in mind that these tables are in no way a substitute for knowledge of the literature with respect to a particular clone or polyclonal product; these tables represent results of a collation of the literature available to us at the time of preparation. Individual results within laboratories may vary somewhat as techniques and protocols are pertinent variables. It is the hope of Cell Marque that pathologists and laboratorians, in general, will find these useful in daily pathology practice when it comes to making differential diagnosis.

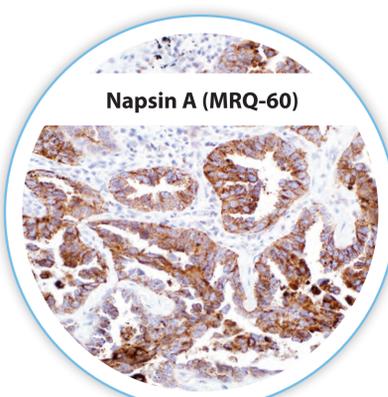
Nick Long, M.D.



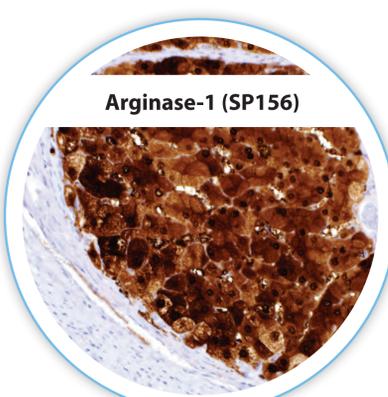
PAX-8 (MRQ-50)
Ovarian Serous Carcinoma



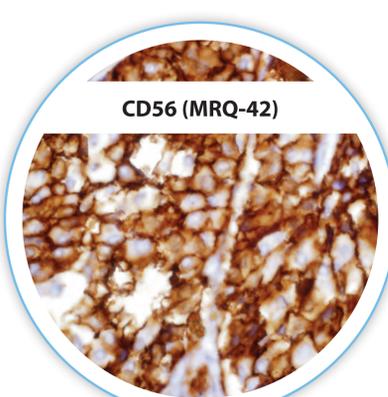
p120 Catenin (MRQ-5)
Invasive Lobular Carcinoma



Napsin A (MRQ-60)
Lung Adenocarcinoma



Arginase-1 (SP156)
Liver Cirrhosis



CD56 (MRQ-42)
Pancreatic Neuroendocrine Carcinoma

| Pancreatic Tumors | Synaptophysin | Chromogranin | Insulin | Glucagon | Gastrin | Somatostatin | CD56 | Beta-Catenin | PGP 9.5 | CK 19 | CA19-9 | S100P | E-cadherin | CD10 | Maspin | IMP3 |
|-----------------------------|---------------|--------------|---------|----------|---------|--------------|------|--------------|---------|-------|--------|-------|------------|------|--------|------|
| Pancreatic Ductal Carcinoma | - | - | - | - | - | - | - | +/- | - | - | + | + | +/- | +/- | + | + |
| Neuroendocrine Tumor | + | + | +/- | +/- | +/- | +/- | + | + | + | +/- | +/- | - | - | - | - | - |
| Solid Pseudopapillary | + | - | - | - | - | - | + | + | - | - | - | - | - | + | - | - |
| Acinic Cell Carcinoma | - | - | - | - | - | - | - | + | - | + | -/+ | - | + | +/- | - | - |
| Pancreatoblastoma | - | + | - | - | - | - | + | + | - | - | - | - | - | - | - | - |
| Benign Pancreas | + | + | + | + | - | + | - | + | - | - | - | - | - | - | - | - |

| Brain: CNS Tumors | GFAP | Neurofilament | Synaptophysin | S-100 | CK Cocktail | PR | EMA | Vimentin | NGFR | INI-1 | SOX-2 |
|--------------------------|------|---------------|---------------|-------|-------------|-----|-----|----------|------|-------|-------|
| Astrocytoma | + | - | - | + | - | - | - | + | + | + | + |
| Glioblastoma | + | - | - | + | - | - | - | + | + | + | + |
| Oligodendroglioma | - | - | - | + | - | - | - | + | - | + | + |
| Ependymoma | +/- | - | - | + | - | - | - | +/- | + | + | + |
| Choroid Plexus Carcinoma | -/+ | - | + | + | + | - | - | - | - | + | + |
| Central Neurocytoma | -/+ | - | +/- | - | - | - | - | - | + | + | + |
| Neuroblastoma | +/- | + | +/- | +/- | - | - | - | - | + | + | - |
| Pineocytoma | -/+ | - | + | + | - | - | - | - | - | + | - |
| Meningioma | - | - | - | - | - | + | + | + | - | + | - |
| Schwannoma | + | - | - | + | -/+ | - | - | + | + | - | - |
| Rhabdoid Tumors | - | +/- | - | +/- | + | - | + | + | - | - | - |
| Metastatic Carcinoma | - | - | - | - | + | -/+ | + | -/+ | - | - | - |

| Kidney: Renal Epithelial Tumors | RCC | CD10 | Claudin 7 | Vimentin | Ksp-cadherin | Parvalbumin | CD117 | S100A1 | CA IX | PAX-8 |
|---------------------------------|-----|------|-----------|----------|--------------|-------------|-------|--------|-------|-------|
| Clear Cell Renal Cell Carcinoma | + | + | -/+ | + | - | - | - | + | + | + |
| Chromophobe RCC | - | +/- | + | - | + | + | + | - | - | + |
| Papillary RCC | + | + | -/+ | + | - | - | - | + | + | + |
| Oncocytoma | - | -/+ | - | - | + | + | + | + | - | + |

| Differential Diagnosis of Parathyroid Tumors | Chromogranin A | Synaptophysin | PTH | S-100 | TTF-1 | Calcitonin | PAX-8 |
|--|----------------|---------------|-----|-------|-------|------------|-------|
| Parathyroid Tumors | + | + | + | - | - | - | - |
| Follicular Thyroid Tumors | - | - | - | +/- | + | - | + |
| Medullary Thyroid Carcinoma | + | + | - | - | + | + | + |

| Sex Cord Stromal Tumors | Calretinin | Inhibin | CD99 | CK 7 | EMA | Vimentin | MART-1 |
|----------------------------|------------|---------|------|------|-----|----------|--------|
| Granulosa Cell Tumors | + | + | + | - | - | + | + |
| Sertoli-Leydig Cell Tumors | + | + | -/+ | + | - | + | + |
| Gynandroblastoma | + | + | - | - | - | - | - |
| Gonadoblastomas | + | + | + | - | - | + | - |

| Breast vs. Lung vs. Prostate Carcinoma | GCDPF-15 | Mammaglobin | PSA | TTF-1 | Napsin A | GATA3 | ERG |
|--|----------|-------------|-----|-------|----------|-------|-----|
| Breast Carcinoma | + | + | - | - | - | + | - |
| Lung Carcinoma | - | - | - | + | + | - | - |
| Prostate Carcinoma | - | - | + | - | - | - | + |

| Breast Carcinoma | GCDPF-15 | Mammaglobin | Beta-Catenin | E-cadherin | CK 34BE12 | p120 |
|------------------|----------|-------------|--------------|------------|-----------|------|
| Lobular | + | + | - | - | + | + |
| Ductal | + | + | + | + | - | + |

| Uterus: Trophoblastic cells | 1st Trimester | | 2nd Trimester | | 3rd Trimester | |
|-----------------------------|---------------|--------|---------------|--------|---------------|-------|
| | hCG | hPL | hCG | hPL | hCG | hPL |
| Cytotrophoblast | - | - | - | - | - | - |
| Intermediate Trophoblast | 1-24% | 25-49% | +/- | 50-74% | 1-24% | 1-49% |
| Syncytiotrophoblast | >75% | 1-24% | 25-49% | 50-74% | 1-24% | >75% |

PBS & TBS Wash Buffers with Tween® 20

Phosphate Buffered Saline (PBS) and Tris Buffered Saline (TBS) are concentrated wash solutions designed to rinse reagents from tissue slides. PBS is recommended with any detection system except those that contain alkaline phosphatase, while TBS is best used when it is present to avoid excessive phosphate accumulation. The addition of Tween® 20 may reduce background and thereby produce a cleaner stain.

Cell Marque strives to be complete and accurate in the presentation of this information; however, Cell Marque, its shareholders, its officers, its employees, and its business associates assume no liability for any reliance on any of the contents of this poster including but not limited to any of the antibody panels without regard to whether or not these are accurate and/or complete. Furthermore, Cell Marque assumes no liability for any omissions. It is the sole responsibility of laboratories to independently validate the application and proper use of any products and/or protocols. Cell Marque reserves the right to make any changes, additions, and/or deletions to its product offerings at any time without notice. The antibody panels were constructed based on Cell Marque's internal investigations with scores based on the percentage of positivity represented as follows: "+" for 9-40%, "+/-" for 40-50%, "-" for 50-90%, and "-" for 90-100% and blank for no available data.

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| Skin: Basal vs. Squamous Cell Carcinoma | CK Cocktail | Ep-CAM | EMA |
|---|-------------|--------|-----|
| Basal Cell Carcinoma | + | + | - |
| Squamous Cell Carcinoma | + | - | + |

| Breast Carcinoma in-situ vs. Infiltrating Breast Carcinoma | Calponin | SM Myosin | p63 |
|--|----------|-----------|-----|
| Breast Carcinoma in-situ | + | + | + |
| Infiltrating Breast Carcinoma | - | - | - |

| Ovarian Carcinomas | PAX-8 | WT1 | CA-125 | CEA |
|--------------------------------|-------|-----|--------|-----|
| Ovarian Carcinoma, Serous | + | + | + | + |
| Ovarian Carcinoma, Mucinous | - | - | - | - |
| Ovarian Endometrioid Carcinoma | + | - | + | - |
| Ovarian Clear Cell Carcinoma | + | - | + | - |

| Meningiomas from Histologic Mimics | Claudin 1 | EMA | S-100 | CD34 | GFAP |
|------------------------------------|-----------|-----|-------|------|------|
| Meningothelial Meningioma | + | + | - | - | - |
| Atypical Meningioma | + | + | - | + | - |
| Fibrous Meningioma | - | + | + | - | - |
| Solitary Fibrous Tumor | - | - | - | + | - |
| Meningeal Hemangiopericytoma | - | - | - | + | - |
| Schwannoma | +/- | - | + | - | + |

| Liver Neoplasms | Arginase-1 | Hep Par-1 | Glypican-3 | CD10 | pCEA |
|---------------------------|------------|-----------|------------|------|------|
| Hepatic Adenoma | + | + | - | + | + |
| Hepatocellular Carcinoma | + | + | + | + | + |
| Metastatic Adenocarcinoma | - | - | - | -/+ | -/+ |

| Renal Cell Carcinoma vs. Hemangioblastoma | D2-40 | FLI-1 | CD31 | CK Cocktail | CD10 |
|---|-------|-------|------|-------------|------|
| Metastatic Renal Cell Carcinoma | - | - | - | + | + |
| Hemangioblastoma | + | + | + | - | - |

| Skin: Pagetoid Tumors | AE1 | AE3 | S-100 | SOX-10 | Vimentin |
|-----------------------|-----|-----|-------|--------|----------|
| Melanoma | - | - | + | + | + |
| Paget's Disease | + | - | -/+ | - | - |
| Bowen's Disease | + | + | - | - | - |

| Skin: Adnexal Tumors | CK 7 | CK 20 | S-100 | EMA | GCDPF-15 | CD15 |
|-----------------------|------|-------|-------|-----|----------|------|
| Merkel Cell Carcinoma | - | + | - | + | - | - |
| Sebaceous Tumor | + | - | - | - | - | + |
| Apocrine Tumor | - | - | - | +/- | + | +/- |
| Eccrine Tumor | - | + | + | - | - | - |

| Breast Carcinoma | CK 7 | CK 20 | ER/PR | CD44 | p40 | CA19-9 | p63 | CK5 | CD117 |
|-------------------------------|------|-------|-------|------|-----|--------|-----|-----|-------|
| Infiltrating Ductal Carcinoma | + | - | + | + | - | - | - | - | - |
| Adenoid Cystic Carcinoma | + | - | - | - | + | + | + | + | + |

| Germ Cell Tumors | SALL4 | SOX-2 | Oct-4 | PLAP | CD117 | CD30 | AFP | B-hCG | Synaptophysin | Glypican |
|-----------------------|-------|-------|-------|------|-------|------|-----|-------|---------------|----------|
| Seminoma/Dysgerminoma | + | - | + | + | + | - | - | - | - | - |
| Embryonal Carcinoma | + | + | + | + | - | + | - | - | - | - |
| Yolk Sac Tumor | + | - | - | -/+ | -/+ | - | + | - | - | + |
| Choriocarcinoma | - | - | - | +/- | - | - | - | + | - | - |
| Mature Teratoma | - | +/- | - | +/- | - | - | +/- | - | - | - |
| Immature Teratoma | +/- | + | - | - | +/- | - | - | +/- | - | - |
| Carcinoid | - | - | - | - | - | - | - | - | + | - |