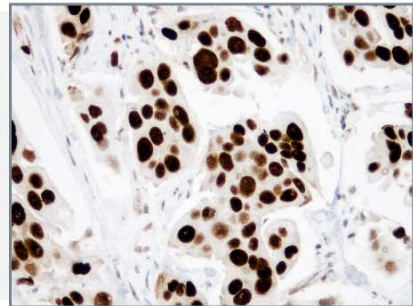


p16^{INK4a}
Cervical biopsy showing high-grade dysplasia positive for expression of p16^{INK4a}

Cervical dysplasia and p16^{INK4a}: High levels of expression of p16^{INK4a} in the cervix are specific for neoplasia and high-grade dysplasia and have been shown to be helpful in improving the accuracy of these diagnoses. p16^{INK4a} represents an excellent surrogate marker for the presence of high-risk HPV types.



p53
Serous endometrial adenocarcinoma showing overexpression of p53

Uterine serous carcinoma vs. endometrioid adenocarcinoma: Overexpression of the p53 tumor suppressor gene product aids in distinguishing uterine serous carcinoma from endometrioid adenocarcinoma. p53, in conjunction with the proliferation marker Ki-67, is also useful in highlighting the corresponding 'in situ' lesion, endometrial intraepithelial carcinoma (EIC). In addition, in contrast to lower grade endometrioid adenocarcinoma, uterine serous carcinomas are usually ER negative and positive for overexpression of p16.

Primary vs. metastatic ovarian mucinous adenocarcinoma: While most primary ovarian mucinous adenocarcinomas show enteric differentiation, and are positive for expression of CDX2 and villin, they can often be distinguished from metastatic mucinous adenocarcinomas, e.g., from the appendix or colorectum, by the expression of PAX8 and cytokeratin 7.

	CDX2	Villin	CK7	CK20	PAX-8
Ovarian mucinous					
Appendiceal mucinous					

Almost always positive	Usually positive	Not helpful	Usually negative	Almost always negative

See introduction to heat maps page 15

	PAX-2	PAX-8	ER	WT-1	NapsinA
Ovarian serous					
Ovarian mucinous					
Ovarian endometrioid					
Ovarian clear cell					
Breast carcinoma					
Renal cell carcinoma					

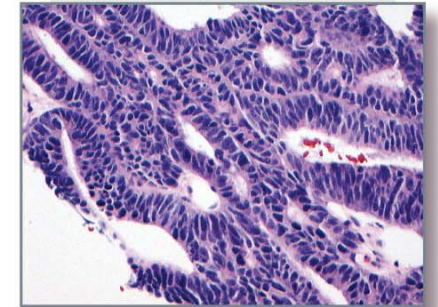
Heatmap content available in the printed Pathology Reference Guide

Subtyping of ovarian carcinomas: Antibodies to PAX-8, WT-1 and estrogen receptor can help in the identification of specific ovarian carcinoma subtypes, e.g., serous, mucinous, clear cell and endometrioid. Because of the overlap of expression of PAX-8 with renal tumors in particular, these antibodies may best be employed as part of a panel of other organ-specific markers. Also, it has been demonstrated that napsinA can serve as a novel positive marker of clear cell ovarian cancer, distinguishing this from other ovarian cancer subtypes. The above table summarizes the immunophenotypes of ovarian cancers.

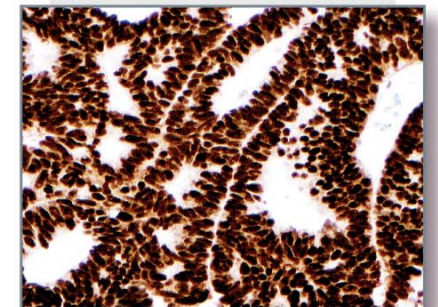
	Vimentin	PAX-8	ER	CEA	Nuclear beta-catenin
Endometrial					
Endocervical					

Endometrial vs. endocervical adenocarcinoma: Antibodies to estrogen receptor, vimentin, CEA and PAX-8 can help in the distinction of these two adenocarcinomas, as shown in the above heat map.

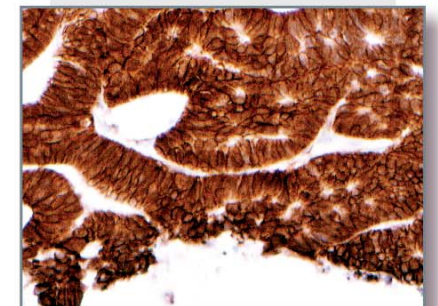
Sex cord-stromal tumors: Inhibin-alpha, calretinin and FOXL2 are markers expressed in sex-cord stromal tumors and are useful when used in combination with antibodies to cytokeratins in order to discriminate between epithelioid sex cord-stromal tumors and carcinomas.



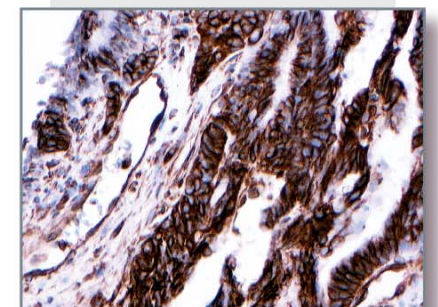
H&E
Adenocarcinoma found in endocervical curettings with differential diagnosis of endocervical vs endometrial origin. Expression of PAX-8, nuclear beta-catenin and vimentin point to the diagnosis of an endometrial primary (see bottom heat map).



PAX-8



Beta-catenin



Vimentin