

Evaluation of ProEx C (MCM2 and TOP2A), p16 and Ki-67 as biomarkers for cervical carcinoma



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Background

Cervical cancer is the second most common cancer among women worldwide. Many studies have confirmed a strong correlation between p16 over-expression and high-grade premalignant or malignant lesions of the cervix. A newer biomarker ProEx C has been implicated as a useful indicator for cervical cancer.

However, data on comparison between these biomarkers in cervical cancer remain limited. In this study, we investigated the expression of ProExC, p16 and Ki-67 in cervical carcinoma and ovarian tumors as comparison.

Materials & Methods

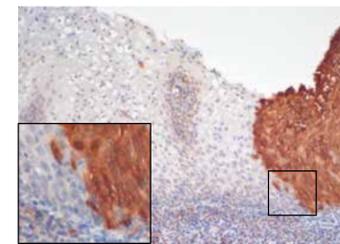
ProEx C antibody cocktail (AN589) was prepared from rabbit monoclonal antibodies against minichromosome maintenance protein 2 (MCM2) and Topoisomerase II alpha

Co-localization of ProEx C/p16 and ProEx C/Ki-67 was determined by simultaneous double stain method (BioGenex #HK596).

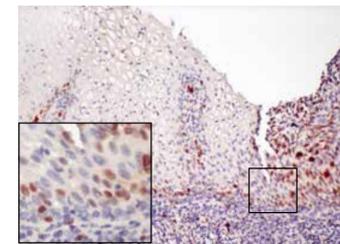
Fully automated Xmatrix® system was used for the IHC staining.



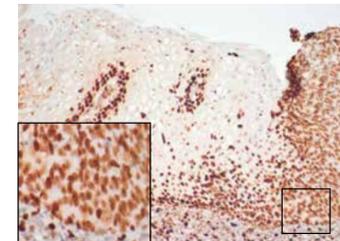
Results



3A
p16 IHC



3B
Ki-67 IHC



3C
ProEx C IHC

Results

ProEx C staining was found in all 28 cases of cervical carcinoma tissues. All the cancer cells and some other proliferative cell types showed nucleus staining pattern.

p16 was observed in all 28 cases, with both nucleus and cytoplasmic staining. The p16 staining was limited within cancerous cells.

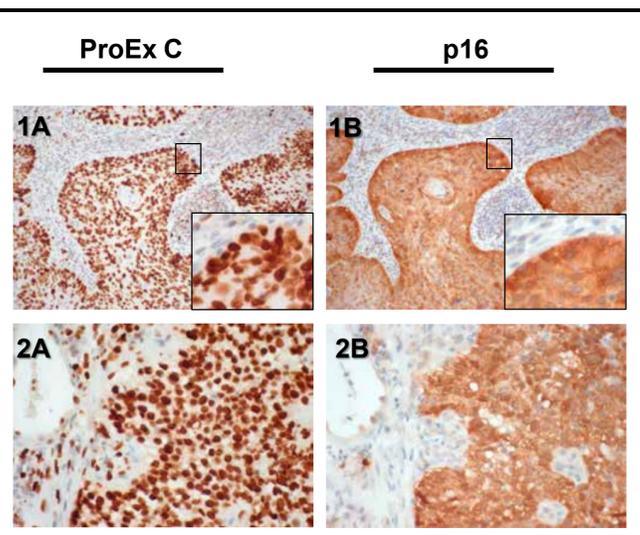
Simultaneous double stain for ProEx C/p16 demonstrated that over 90% of cancer cells co-expressing these two biomarkers.

Although Ki-67 staining was also observed in all the cases, a variable portion (less than 50%) of cancer cells was Ki-67 positive.

Objective

To determine the value of ProEx C combined with p16 and Ki-67 in detection of cervical carcinoma.

Results



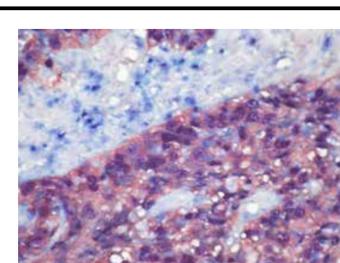
Materials & Methods

Total of 28 cases of cervical carcinoma biopsies were included in this study.

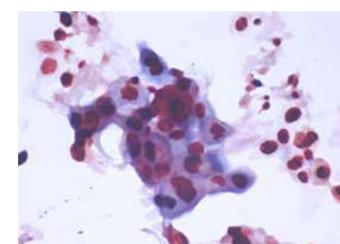
Cervical ThinPrep samples were also tested.

Conclusions

- 1) ProEx C is a sensitive proliferation biomarker for diagnosis of cancer, which is more sensitive in determining proliferation status than that of Ki-67.
- 2) p16 is a more specific biomarker for cervical carcinoma
- 3) Combination of ProEx C and p16 may increase the sensitivity and specificity in cervical cancer detection.
- 4) ProEx C and p16 double stain may be useful in cervical cytology .



4 A
ProEx C/p16
double stain in
cervical cancer



4 B
ProEx C/p16
double stain
cervical scrap