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**Letter to the Editor**

# Expression and Clinical Significance of CREPT and CDK4 in Cervical Cancer

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## Dear Editor-in-Chief

Recent years have witnessed the increasing incidence of cervical cancer, with an emerging trend of this disease at younger ages (1,2). If timely diagnosis can be made at the early stage of patients, we can improve the survival of patients with cervical cancer.

The expression rate of cell-cycle related and expression-elevated protein in tumor (CREPT) in oral squamous cell carcinoma is significantly higher than that in corresponding normal tissues (3). Cyclin-Dependent Kinase 4 (CDK4) has been found to be a new anti-tumor target closely related to cancer in recent years (4,5), which presents gene amplification and high expression in esophageal cancer, bladder cancer, gastric cancer, cervical cancer (6,7).

Patients in Xuzhou No.1 People's Hospital from February 2010 to April 2013 were collected. Subsequently, we analyzed the diagnostic value of CREPT and CDK4 in patients with cervical cancer by ROC curve. The Area under Curve (AUC) of CREPT was 0.861, and when the cutoff point was <5.164, the best specificity and sensitivity were 76.74% and 84.72%, respectively. The AUC of CDK4 was 0.798, and the best specificity and sensitivity were 61.63% and 88.89% respectively when the cut-off point was <7.715. This suggested that CREPT and CDK4 may be used as diagnostic indicators of cervical cancer. Through detecting the expression of CREPT and CDK4 in patients, we found that the CREPT expression level was significantly correlated with TNM stage, differentiation degree and lymph node metastasis ($P$<0.05). Similarly, the CDK4 expression level was markedly associated with TNM stage, differentiation degree and lymph node metastasis ($P$<0.05) (Table 1). Further, we divided the patients in the RG into high and low expression groups according to the median of CREPT and CDK4, and drew the K-M survival curve. It was found that the 5-yr survival of patients with high expression of CREPT and CDK4 was significantly lower than that of patients with corresponding low expression, which indicated that the higher the expression of CREPT and CDK4, the higher the mortality. At the end of the study, we investigated the relationship between CREPT and CDK4 in cervical cancer patients by Pearson correlation and found that the two was positively correlated (r=0.472, $P$<0.001) (Fig. 1).

We speculated that the high expression of CREPT may affect the increase of CDK4 expression, but their specific relationship still needs to be further studied.

This study was approved by the Ethics Committee of Xuzhou No.1 People's Hospital. Signed written informed consents were obtained from the patients.

To sum up, the expression of CREPT and CDK4 in patients with cervical cancer is higher than that in normal controls. CREPT and CDK4 are positively correlated, and both are related to the differentiation degree, TNM stage and lymph node metastasis of cervical cancer patients. The higher the expression of CREPT and CDK4, the worse the survival.

**Table 1:** Correlation of CREPT and CDK4 with clinicopathological characteristics of cervical cancer patients [n(%)]

| *Clinicopathological features* | *n* | *CREPT (n=86)* | *t value* | *P value* | *CDK4 (n=86)* | *t value* | *P value* |
|---|---|---|---|---|---|---|---|
| Age(yr) | | | 0.210 | 0.834 | | 0.358 | 0.721 |
| ≤40 | 46 | 5.405±0.398 | | | 7.628±0.468 | | |
| >40 | 40 | 5.387±0.394 | | | 7.592±0.462 | | |
| TNM stage | | | 4.981 | <0.001 | | 4.771 | <0.001 |
| I+II | 63 | 4.884±0.369 | | | 7.337±0.426 | | |
| III+IV | 23 | 5.336±0.382 | | | 7.853±0.491 | | |
| Differentiation degree | | | 4.712 | <0.001 | | 5.419 | <0.001 |
| Moderate and high differentiation | 27 | 4.832±0.363 | | | 7.212±0.413 | | |
| Low differentiation | 59 | 5.247±0.386 | | | 7.787±0.475 | | |
| Lymph node metastases | | | 4.760 | <0.001 | | 4.509 | <0.001 |
| Yes | 36 | 5.334±0.381 | | | 7.667±0.471 | | |
| No | 50 | 4.943±0.372 | | | 7.227±0.428 | | |
| History of smoking | | | 0.873 | 0.385 | | 1.039 | 0.302 |
| Yes | 38 | 5.267±0.368 | | | 7.921±0.472 | | |
| No | 48 | 5.336±0.361 | | | 7.815±0.468 | | |
| History of alcoholism | | | 0.159 | 0.874 | | 0.678 | 0.500 |
| Yes | 36 | 5.304±0.372 | | | 7.813±0.478 | | |
| No | 50 | 5.317±0.376 | | | 7.884±0.480 | | |
| History of early marriage and early childbearing | | | 1.347 | 0.182 | | 0.246 | 0.807 |
| Yes | 45 | 5.274±0.367 | | | 7.847±0.411 | | |
| No | 41 | 5.381±0.369 | | | 7.825±0.419 | | |
| Multiple births | | | 0.044 | 0.965 | | 1.019 | 0.311 |
| Yes | 65 | 5.358±0.363 | | | 7.892±0.486 | | |
| No | 21 | 5.362±0.366 | | | 7.785±0.481 | | |
| History of abortion | | | 0.931 | 0.354 | | 0.653 | 0.515 |
| Yes | 54 | 5.388±0.381 | | | 7.812±0.463 | | |
| No | 32 | 5.309±0.379 | | | 7.879±0.454 | | |

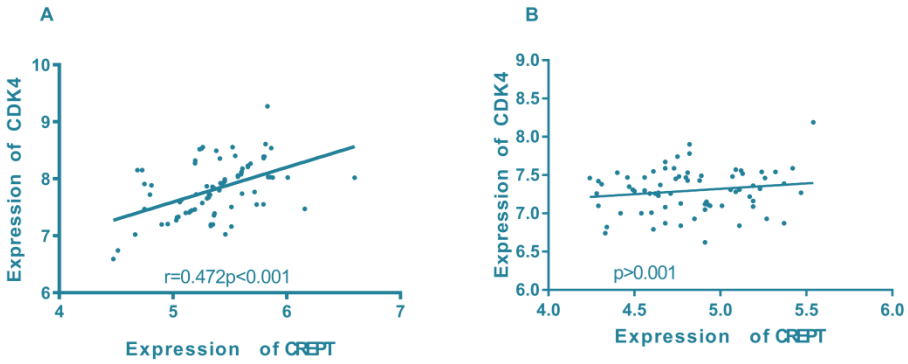


**Fig. 1:** Correlation analysis between CREPT and CDK4
CREPT and CDK4 was positively correlated (r=0.472, *P*<0.001)

## Conflict of interest

The authors declare that there is no conflict of interest.

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