

## Letter to the Editor

### Survivin expression in ovarian carcinoma: correlation with apoptotic markers and prognosis

Modern Pathology (2004) 17, 264. doi:10.1038/modpathol.3800046

**To the editor:** We read with great interest the article by Cohen *et al.*<sup>1</sup> describing how survivin expression in ovarian carcinoma is correlated with prognostic factors such as grade, histologic type and mutant p53. However, it did not correlate with survival.

We have recently finished a similar study evaluating the expression of survivin in rectal cancer with preoperative irradiation. Preradiation biopsy specimens were obtained from 96 patients with rectal carcinoma who underwent preoperative radiation and curative surgical resection in our department. The streptavidin–biotin peroxidase complex technique was used for staining sections, almost the same as Cohen *et al.*<sup>1</sup> Antisurvivin polyclonal antibody (1:100; Novus Biologicals Inc., Littleton, Co, USA), or anti-p53 monoclonal antibody (1:200; Dako, Kyoto, Japan) was used. If the patterns of immunostaining were under 10%, cancers were regarded as negative; but if equal or over 10%, as positive. No significant correlation was seen between survivin expression and factors such as age, stage, or p53 mutation, except histology (Table 1). The expression pattern of survivin or p53 mutation did not correlate

with local recurrence, disease-free survival or overall survival in 96 rectal carcinoma patients (data not shown). These data did not support the therapeutic target of survivin in rectal cancer with preoperative radiotherapy.

We are very curious to know whether adjuvant therapy such as chemo- and/or radiotherapy was performed in the 49 patients with ovarian carcinoma, which Cohen *et al.*<sup>1</sup> did not mention. Apoptosis is an important mechanism by which chemo- and radiotherapy kill cells.<sup>2,3</sup> In pancreatic cancer cells, survivin acts as a constitutive and inducible radioresistance factor.<sup>4</sup> Because survivin is a member of the inhibitor-of-apoptosis protein family, increased survivin expression may point to decreased effectiveness of such therapy. If the prognosis of a subgroup with adjuvant therapy is found to correlate with survivin expression, it will more strongly support anti-survivin therapies for ovarian cancer. Studies with a larger number of cases and a standardized method are needed to clarify the action of survivin in many malignant tumors.

**Yasuhiro Komuro<sup>1</sup>, Toshiaki Watanabe<sup>1</sup>, Giichiro Tsurita<sup>1</sup>, Tetsuichiro Muto<sup>2</sup> and Hirokazu Nagawa<sup>1</sup>**

<sup>1</sup>Department of Surgical Oncology,  
 Faculty of Medicine,  
 The University of Tokyo,  
 7-3-1 Hongo, Bunkyo-ku,  
 Tokyo 113-8655,

Japan and <sup>2</sup>The Cancer Institute Hospital,  
 Tokyo, Japan

E-mail: komuro@kt.rim.or.jp

**Table 1** Relation between several proteins and clinicopathological features

	Survivin		P
	Negative	Positive	
No. of Cases	44	52	
Age (years)			
Median	59	60	0.99
Range	39–84	28–77	
Histology			
Wel/Mod	39	52	
Muc	5	0	0.018
pTNM stage			
≤II	25	34	
≥III	19	18	0.41
p53 mutation			
Negative	20	29	
Positive	24	23	0.42

Wel/Mod, well or moderately differentiated adenocarcinoma; muc, mucinous adenocarcinoma; pTNM stage, pathological TNM stage.

## References

- Cohen C, Lohmann CM, Cotsonis G, *et al.* Survivin expression in ovarian carcinoma: correlation with apoptotic markers and prognosis. *Mod Pathol* 2003;16:574–583.
- Meyn RE, Stephens LC, Milas L. Programmed cell death and radioresistance. *Cancer Metast Rev* 1996;15:119–131.
- Reed JC. Regulation of apoptosis by bcl-2 family proteins and its role in cancer and chemoresistance. *Curr Opin Oncol* 1995;7:541–546.
- Asanuma K, Moriai R, Yajima T, *et al.* Survivin as a radioresistance factor in pancreatic cancer. *Jpn J Cancer Res* 2000;91:1204–1209.