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Rare Occurrence of Amplification of HER-2 (*erb*B-2/*neu*) Oncogene in Ovarian Cancer Patients

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THE ONCOGENE HER-2 is often activated in various human tumour types, especially breast carcinomas [1, 2]. Frequent amplification of this gene has also been reported by Slamon *et al.* [2] and Zhaug *et al.* [3] in ovarian cancer, which has pathways similar to those in breast cancer. These investigations detected increased number of HER-2 copies in 26% (of 120 women) and 20% (of 15 women), respectively. The data suggest prognostic significance of increased HER-2 gene for ovarian cancer [2].

We examined the presence of HER-2 amplification in 34 primary ovarian tumours and 26 metastases from the same patients treated in the N.N. Petrov Research Institute of Oncology, St Petersburg, Russia. All tumours were stage III or IV adenocarcinomas. DNA isolation and Southern blot hybridisation were performed [4]. Commercial 0.7 kbp *Hin*dIII – *Eco*RI HER-2 probe (Amersham) revealed 20.0 kbp and 1.8 kbp fragments after hydrolysis with *Hin*dIII or 11 kbp and 1.3 kbp fragments after digestion with *Bam*HI endonucleases. The amount of DNA was checked by rehybridisation with 2.1 kbp *Bam*HI insert of p53 (provided by M. Oren, Weizmann Institute, Israel), which located on the same chromosome [5]. The only case of HER-2 amplification was identified in cancer DNA samples tested. The level of amplification (3-fold) was similar in the primary tumour and in four metastases. Our data agree with the report of Vandamme *et al.* [6] who failed to find extra copies in 20 ovarian carcinomas.

The discrepancy in estimations of the frequency of HER-2 amplification might be due to differences in genetic background or/and aetiological factors for ovarian cancer in Russia, USA and West Europe. Interestingly, in our study the frequency of HER-2 amplification in breast neoplasms (approximately a quarter of more than 100 cases examined) was similar to that in other reports [1, 2].

The low occurrence of HER-2 amplification in ovarian carcinomas in our patients suggests this test will not be useful for clinical purposes.

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