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## Correlation between the protein expression and polymorphism of leptin receptor genes and the occurrence and development of breast cancer

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**Aim:** To explore the correlation between the protein expression and polymorphism of leptin receptor (LEPR) gene and the occurrence, development and pathologic characteristics of breast cancer.

The protein expression of LEPR and its Gln223Arg polymorphism in pre-surgery breast tumor tissues of 150 patients, in benign tumor tissues of 80 patients and in normal paracancerous tissues of 50 patients and in anti-coagulant cubital vein blood of 128 healthy subjects were examined using immunohistochemical staining and PCR-RFLP, respectively. The positive rate of LEPR expression in breast tumor tissues was 70.67%, significantly higher than that of 56.25% in benign breast tissues and that of 44.0% in normal paracancerous breast tissues (P<0.039 and P<0.005, respectively). In breast cancer patients, LEPR gene Gln223Arg genotype of GG ,GA and AA expressions were 70.0%,16.67% and 13.33% ,which were significantly different from those of the benign breast lesions 82.50%,13.75%, 3.75%, in paracancerous normal breast tissues 82.0%, 14.0%, 4.0% and the health control of 82.81%, 14.85% and 2.34%( P=0.005); alleles genes (G and A) were 78.33% and 21.60% in breast cancer patients,which were significantly different from those of the benign breast lesions 89.37% and 10.63%, in paracancerous normal breast tissues 89.42%, 10.58 and in anti-coagulant cubital vein blood of health control of 90.23%, 9.77% (P=0.001). In addition, LEPR expression was correlated neither with menopausal status, histological type, tumor size, tumor grade and metastasis status (P>0.05), nor the expression of estrogen receptor (ER) and progesterone receptor (PR) (P>0.05).However, the positive rate (87.8%) of LEPR expression in patients with lymph node metastasis was significantly higher than that of 60.2% in patients with no lymph node metastasis (P=0.02). Non-conditional logistic regression analysis indicated that the high LEPR expression, the LEPR gene Gln223Arg polymorphism and high WHR were correlated with the occurrence of breast cancer (OR=5.06, 95% CI: 1.35~10..28, P=0.002; OR=3.82, 95% CI: 1.28~18.13, P=0.012; OR = 3.62, 95%CI: 1.32~9.97, P=0.017). High expression of LEPR, LEPR gene Gln223Arg polymorphism and enhanced WHR are related with the high risk for breast cancer

**Keywords:** Breast cancer, Leptin receptor gene, Gln223Arg polymorphism.

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## The expression pattern of retinoblastoma protein in canine mammary tumor: A perspective study

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The retinoblastoma gene (RB) is a well known tumor-suppressor gene. Inactivation of RB has been shown in a variety of human cancers but its role in veterinary oncology is still unclear. As canine mammary tumor is one of the models for human breast cancer, we analysed the expression of the retinoblastoma (RB) gene in 31 canine mammary carcinomas and in a variety of its benign lesions. Among the 31 cases analysed; 2 were of simple carcinoma, 14 of complex carcinoma, 13 of carcinosarcoma and 2 of sarcoma. Expression of RB was assessed in all samples by immunohistochemical technique. The results of our study revealed the immunolocalisation of RB to the basal cell layer and were predominantly nulear. The expression was also high in benign lesions like ductal, lobular hyperplasia as well as atypical hyperplasia. The loss of RB was noticed as the cell becomes neoplastic, malignant and invasive although none of the tumor was totally negative. As the tumor advanced, the expression of RB gene was lost in 60-90% cells of 28 cases of canine mammary tumour. Thus, findings of our study uncover the importance of retinoblastoma gene (RB), the loss of which leads to uncontrolled cell division, tumor progression and may indicate poor prognosis.

### Biography

Dnyaneshwar Gavhane has completed his B.V.Sc. & AH degree from Maharashtra Animal and Fishery Sciences University, Nagpur, India. He got selected by Indian Council of Agricultural Research for post graduation studies in the subject Veterinary Pathology at Guru Angad Dev Veterinary and Fishery Sciences University, Ludhiana, India in the year 2009. Currently he is doing his Ph.D. at Bombay Veterinary College, Mumbai, India. He has attended various National, International conferences and delivered seminars and has presented the posters.

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