SOCIETÀ ITALIANA DELLE SCIENZE VETERINARIE

*In collaborazione con:*

Università degli Studi di Perugia

Dipartimento di Medicina Veterinaria di Perugia

IZS dell'Umbria e delle Marche

XV Convegno S.I.C.V.

XIII Convegno S.I.R.A.

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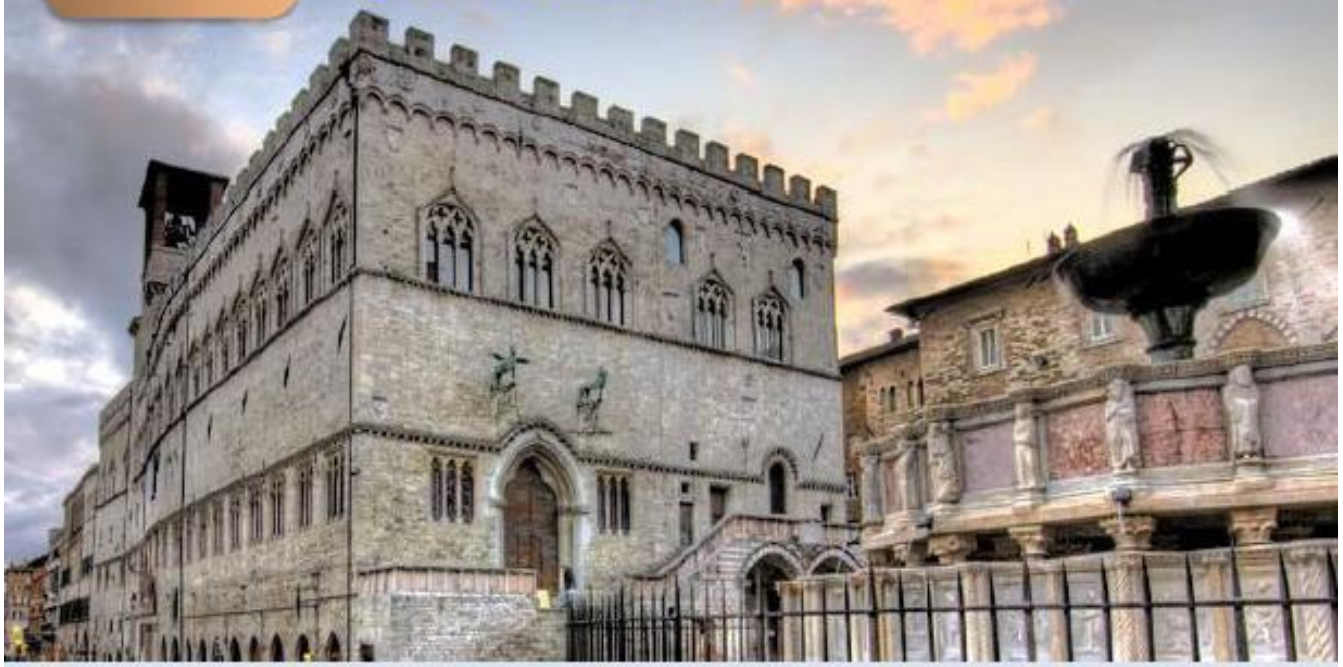
XI Convegno So.Fi.Vet

XII Convegno AIPVet

# ATTI DEL LXIX CONVEGNO SISVET



**Perugia, 15-17 Giugno 2015**

**Università degli Studi di Perugia**

**Dipartimento di Medicina Veterinaria**

Via S. Costanzo, 4 - 06126 Perugia

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**Joint meeting**

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Safefood

Largo Braccini 2
Grugliasco (TO) 10095
direzione@safood.it
www.safood.it

# IMMUNOHISTOCHEMICAL EVALUATION OF P62 IN CANINE MAMMARY TUMORS

Francesca Mariotti, Gian Enrico Magi and Subeide Mari

School of Bioscience and Veterinary Medicine, University of Camerino

In the last years in human and veterinary oncology most of the pathogenetic studies regarding mammary tumors has been paid to apoptosis and autophagy mechanisms. P62 can be considered the crossroad molecule of autophagy and apoptosis (2).

The p62 protein, also called sequestosome 1, is a ubiquitin-binding scaffold protein that polymerizes via an N-terminal PB1 domain and can interact with ubiquitinated proteins via the C-terminal UBA domain. P62 is found in cellular inclusion bodies and in cytosolic protein aggregates that accumulate in various chronic, toxic, and degenerative diseases(1).

In veterinary medicine, the role of p62 in tumors is poorly understood. A recent study has been performed in canine cutaneous mast cell tumors (3). The aim of this study is to evaluate the immunohistochemical expression of p62 in normal mammary tissue, in adenomas and carcinomas of the dog.

The immunohistochemical analysis were performed on thirty-six mammary tumors and eight normal mammary tissues present in archive of Laboratory of Animal Pathology - University of Camerino. The samples were histologically classified according to criteria of WHO. When present, the regional lymph nodes were analyzed too.

Immunohistochemistry was carried out by the Streptavidin-Biotin-Peroxidase method using as primary antibody an anti-p62 antibody (Sigma- Aldrich). Immunohistochemically, we have found specific reaction to p62 in epithelial cells of normal and neoplastic tissues. All normal mammary tissues, normal, and hyperplastic lobules exhibited a strong, homogeneous positiveness towards p62. Almost all epithelial cells showed a brown granular stain in the cytoplasm while the nucleus was negative. Only 5% of myoepithelial cells were immunostained while the stroma was always negative. In all adenomas immunostain to p62 was enough intense but the percentage of epithelial positive cells was lower (65%).

In malignant tumors, the immunoreaction appeared heterogeneous both between samples and within the same sample. In fact, 19 tumors (68%) showed little areas strongly positive close to others hardly negative while 9 tumors (32%) exhibited a diffuse weak stain. Only two of 7 high-grade carcinomas appeared positive to p62. Metastatic cells in lymph nodes were p62 positive in 50% of cases. These data could suggest a correlation between p62 expression and neoplastic progression because in carcinomas p62 overexpression is not observed. To date, as the paucity of samples examined and the complex role of p62 in autophagy and apoptosis, we believe that is not possible to consider p62 a progression marker in canine mammary tumors.

In the future will be interesting to compare these results with data obtained from breast cancer studies where a few authors hypothesize a negative correlation between p62 expression and neoplastic progression while most authors believe that p62 play a role in the interactions between epithelial neoplastic cells and stroma.

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