

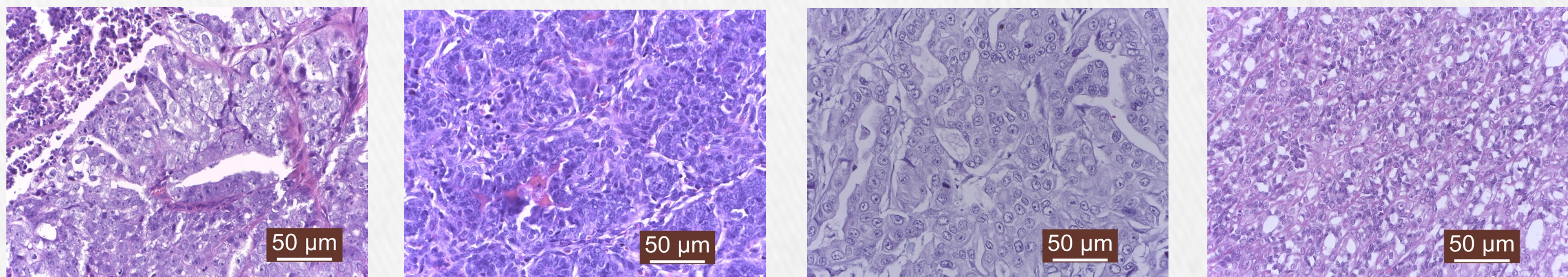
O.M. Hritcu*, F. Daraban Bocaneti†, T. Soare‡, R.I. Rizac‡, M. Militaru‡, A.S. Pasca*©
 *Pathology and †Infectious Diseases, Iasi University of Life Sciences, Iasi, RO ‡Pathology, University of Agronomic Sciences and Veterinary
 Medicine of Bucharest, Bucharest, RO
 © Corresponding author
 passorin@yahoo.com

Background – Mammary carcinomas are among the most frequent canine tumours, generally characterized by poor prognosis. Matrix metalloproteinases are enzymes that reorganize the extracellular matrix to increase its permeability for cells. They are frequently expressed in malignant tumours, allowing for higher invasiveness and neoangiogenesis.

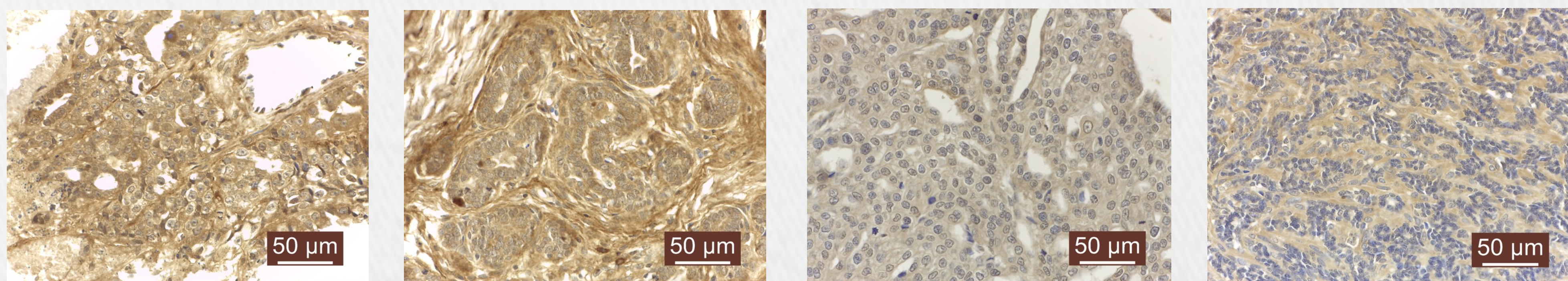
Materials and methods – Twelve canine mammary carcinoma samples (one per patient) were harvested, fixed in a 10% formalin solution, embedded in paraffin, sectioned at 3 µm and subjected to the Masson trichrome stain or immunohistochemical staining for MMP-2, MMP-9, MMP-13 and MMP-14. Immunoreactivity was scored as follows: negative, + weak, ++ moderate, +++ strong positivity.

Results – All MMPs were expressed in all samples, both in the cytoplasm of mammary epithelial and stromal cells, with variable expression intensity. MMP-2: 2 (16.7 %) weak, 5 (41.65 %) moderate and 5 (41.65%) strong; MMP-9: 2 (16.7%) weak, 6 (50%) moderate and 4 (33.3%) strong; MMP-13: 2 (16.7%) weak, 4 (33.3%) moderate and 6 (50%) strong; MMP-14: 4 (33.3%) weak, 6 (50%) moderate and 2 (16.7%) strong.

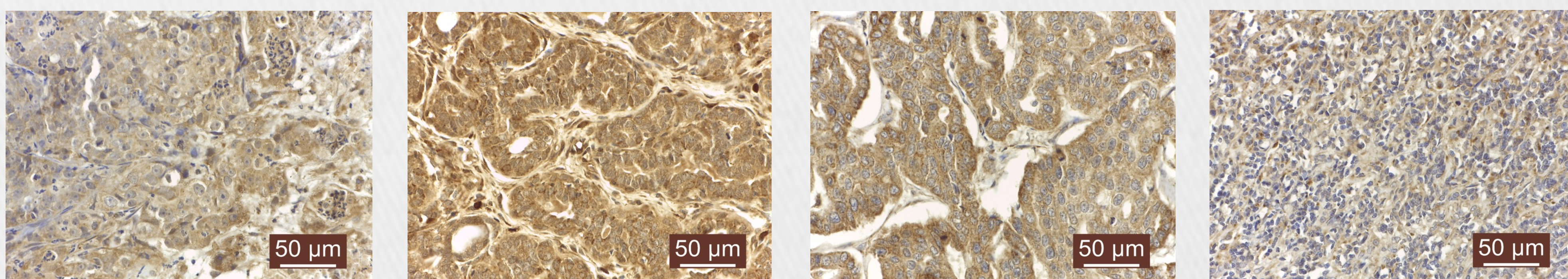
Conclusion – The expression of MMP-2, MMP-9 and MMP-13 detected in carcinomas may suggest a possible link to the permeabilization of basal membranes and invasive behaviour. Moreover, MMP-13 is known to promote cancer growth, invasion, metastasis and angiogenesis, while MMP-14 has been linked to cancer cell motility and tumour growth. The expression of the aforementioned MMPs in mammary carcinomas may be a helpful indicator of future tumour development and prognosis.



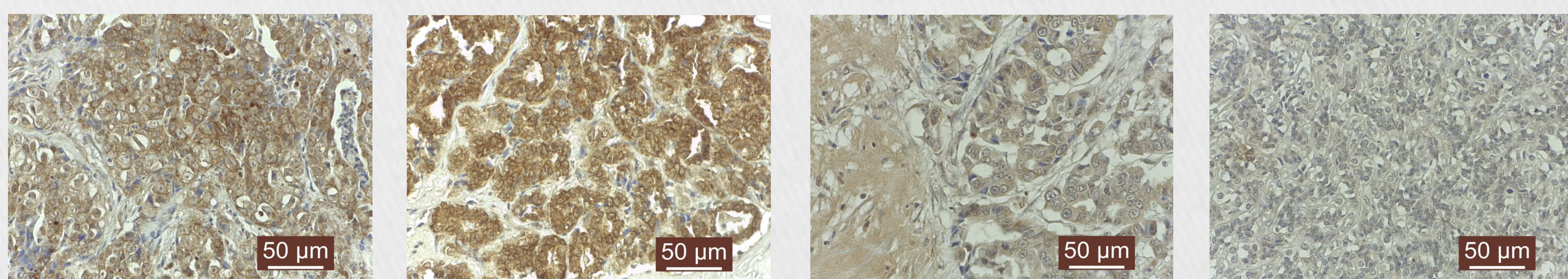
Mammary carcinomas. Dog. Masson trichrome stain



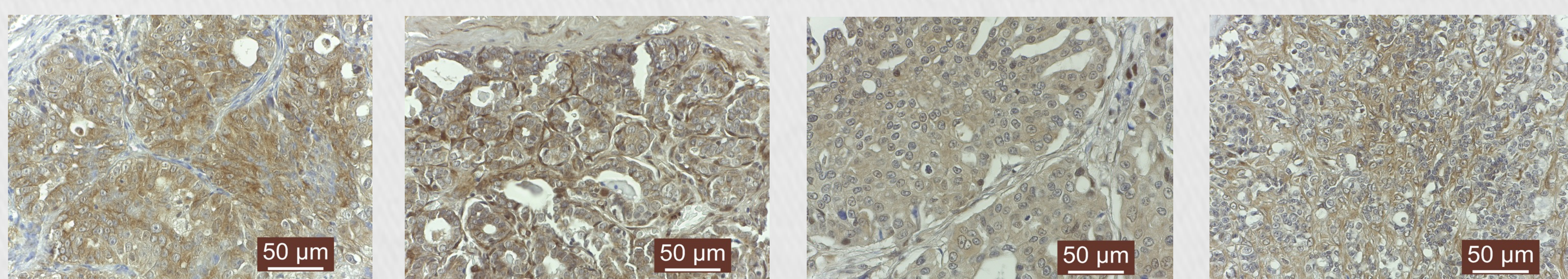
MMP-2 immunoexpression in 4 mammary carcinoma tissue samples. Dog. Hematoxyline background stain.



MMP-9 immunoexpression in 4 mammary carcinoma tissue samples. Dog. Hematoxyline background stain.



MMP-13 immunoexpression in 4 mammary carcinoma tissue samples. Dog. Hematoxyline background stain.



MMP-14 immunoexpression in 4 mammary carcinoma tissue samples. Dog. Hematoxyline background stain.