

Man's best friend: A joint tumor marker in man and dog

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The dog may be man's best friend but even so it comes as a surprise that the two species share a common tumor marker. This finding comes from a joint study between scientists of the Vetmeduni Vienna and the MedUni Wien. The researchers uncovered a molecule, the CEA (carcinoembryonic antigen) receptor, that is almost identical in the two species. The result could lead to the rapid development of new therapies for dogs and humans.

Despite steadily improving methods for its diagnosis and treatment, cancer still represents one of the most frequent causes of death in humans. What is less well known is that this also holds true for pets such as [dogs](#). Each year, an estimated 4,000 dogs in Austria develop cancer and about half the dogs over 10 years old die because they develop a carcinoma that is biologically similar to a human tumour.

CEA is one of the most important markers for tumours. It is found in high concentrations in cancer patients and is thought to have a signalling function in [tumour cells](#), which it effects via a specific [receptor molecule](#), the CEA receptor. Jenson-Jarolim's work now shows that CEA itself is constructed extremely differently in dogs and humans: the antigen represents a particularly heterogeneous and complex system of different families of molecules. In contrast, however, the CEA receptor is essentially identical in the two species. The scientists explain the finding by proposing that the CEA receptor is a very old molecule in evolutionary terms and that because of its biological importance it has remained practically unchanged in the two species.

Subsequent work will address the nature of the molecules that bind to the receptor in human [breast cancer](#) or in cancer of the milk glands in dogs. The hope is that the knowledge can be exploited for new therapeutic approaches. Jensen-Jarolim is excited by the prospect.

"Because dogs have shorter life-spans than humans, similar processes place on a shorter time-scale. This means that research in dogs gives faster results. By means of comparative research on the two species – so-called comparative medicine – it might be possible to develop a new generation of diagnostic and therapeutic procedures much, much faster. And these may be applicable both to humans and to animals."

More information: The paper in full text online:
[knol.google.com/k/marlene-weic ... and/1glqeci8ut3qh/8#](https://knol.google.com/k/marlene-weic...and/1glqeci8ut3qh/8#)

Provided by University of Veterinary Medicine -- Vienna

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