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Insertion/deletion polymorphism in the BRCA2 nuclear localization signal

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ABSTRACT

Mutations in human BRCA2 confer an increased risk of female breast cancer. In this study, we found a novel insertion/deletion polymorphism (10204insAAA causing amino acid change M3332IK) in canine BRCA2, which is located in the putative second nuclear localization signal (NLS2) and C-terminal Rad51-binding region. The nuclear localization of the insAAA C-terminus was more efficient than localization of the delAAA sequence when NLS1 was mutated. Strong, comparable Rad51 binding was observed for both the insAAA and delAAA C-termini. Dogs with the insertion/deletion polymorphism will provide a new model for studying the function of BRCA2.

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