Dog’s genes provide clues to treating muscular dystrophy

A Golden retriever that inherited a genetic defect that causes muscular dystrophy doesn’t have the disease, giving scientists clues to new therapies for treating muscle-wasting diseases.

The dog, Ringo, was bred to have a mutation that causes Duchenne muscular dystrophy in both animals and people. His weak littermates that inherited the same mutation could barely suckle at birth. But Ringo was healthy, with muscles that function normally. One of Ringo’s sons also has the mutation but doesn’t have the disease, said geneticist Natassia Vieira of Boston Children’s Hospital and Harvard University October 19 at the annual meeting of the American Society of Human Genetics.

The dogs without the disease had a second genetic variant that caused their muscles to make more of a protein called Jagged 1, Vieira and her colleagues discovered. That protein allows muscles to repair themselves. Making more of Jagged 1 appears to compensate for the wasting effect of the muscular dystrophy mutation, although the researchers don’t yet know the exact mechanism.

The finding suggests that researchers may one day be able to devise treatments for people with muscular dystrophies by boosting production of Jagged 1 or other muscle repair proteins.

Read full, original article: Gene variant helps dog evade muscular dystrophy