

# Big cattle -- the genes that determine carcass weight

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An area of chromosome 6 that affects cattle carcass weight has been identified using two different Japanese species. Knowledge of this four-gene region, described in the open access journal *BMC Genetics*, should be useful in breeding beef cattle.

Akiko Takasuga, from the Shirakawa Institute of Animal Genetics, led a team of researchers who studied Japanese Black and Japanese Brown cattle, two breeds that have survived separately for thousands of years. According to Takasuga, "The 591-kb critical region contains four genes, LOC523874, C6H4orf30, NCAPG, and LOC540095. Interestingly, LOC540095 is the bovine ortholog of the human gene LCORL, and the NCAPG-LCORL region was recently identified as one determinant of human adult height".

The researchers have named the size-determining region CW-2 and have found a single nucleotide polymorphism which can be used as a positional candidate of CW-2 for marker-assisted selection. Takasuga said, "The CW-2 genotype explains a large portion of phenotypic variance. It may be widely distributed among European [cattle breeds](#) and not yet be fixed. Selection for this genotype should accelerate the breeding of meatier [cattle](#)".

More information: Cross-breed comparisons identified a critical 591-kb region for bovine carcass weight QTL (CW-2) on chromosome 6 and the Ile-442-Met substitution in NCAPG as a positional candidate, Kouji Setoguchi, Masako Furuta, Takashi Hirano, Tomoko Nagao, Toshio

Watanabe, Yoshikazu Sugimoto and Akiko Takasuga, *BMC Genetics* (in press), [www.biomedcentral.com/bmcgenet/](http://www.biomedcentral.com/bmcgenet/)

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