

Additional file 2 Predicted consequences of bovine SERCA1 mutations.

Software	Prediction	p.Arg164His (Chianina)	p.Gly211Val (Romagnola)	p.Gly286Val (Romagnola)	p.Arg559Cys (Belgian Blue)
Polyphen 2	impact of an amino acid substitution on the structure and function of a protein	possibly damaging (score of 0.903)	probably damaging (score 1.000)	probably damaging (score 0.994)	probably damaging (score 1.000)
Net TurnP	possible changes in the formation of Beta-turns	*	predicted beta turn not formed in mutant protein	*	*
NetSurfP	surface accessibility and secondary structure	*	*	changes from buried to exposed	*
CFSSP	secondary structure of protein from the amino acid sequence	*	elimination of a turn (two beta-sheets joined)	elimination of a turn	*
PoPMuSiC	changes in stability of a given protein or peptide under single-site mutations	neutral mutation	destabilizing mutation	destabilizing mutation	destabilizing mutation
Phyre 2	secondary structure and disorder	*	elimination of a turn (two beta-sheets joined)	small alpha helix extended (1 residue)	increased disorder in 460-472 region
TMHMM / THMpred	transmembrane helices and topology of proteins	*	probability decrease in prediction of a transmembrane domain in the M3 subunit by ca. 20%	probability decrease in prediction of a transmembrane domain in the M3 subunit by ca. 20%	*

* no change predicted