Class Hierarchy mutation ontology root ▼ ■mutation event deletion insertion substitution biological sequence polypeptide sequence biological sequence position Diological sequence element amino acid Alanine, Ala, A Glycine, Gly, G ■ Valine, Val, V Leucine, Leu, L Isoleucine, lle, l Methionine, Met, M Phenylalanine, Phe, F Tyrosine, Tyr, Y Tryptophan, Trp, W Serine, Ser, S Proline, Pro, P Threonine, Thr, T Cysteine, Cys, C Asparagine, Asn, N Glutamine, Gln, Q Lysine, Lys, K Histidine, His, H Arginine, Arg, R Aspartate, Asp, D Glutamate, Glu, E biological subsequence polypeptide subsequence

enzymes that contain a Cys-cisSer-Lys, Ser-cisAla-Lys or a substitution of Gly130 with alanine. Cysteine cannot a hyper-reactivity of the residue, which results in the veteinal sulfinic acid, most likely inside the expression has

Substitution	
Seq Position	Biological Sequence Position
Wt Residue	Biological Sequence Element
Mt Residue	Biological Sequence Element

Deletion	
Start	Biological
Position	Sequence Position
End	Biological
Position	Sequence Position
Deleted	Biological
Element	Subsequence

Insertion	
Inserted	Biological
Position	Sequence Position
Inserted	Biological
Element	Sequence Position

Supplementary Figure 1: A schematic representation of the mutation ontology developed for the mutation annotation project. All annotation was performed using the Knowtator package (http://bionlp.sourceforge.net/Knowtator/).