

Frame 1: Predicate MUTATE

Argument Structure for Biology	PropBank Argument Structure
Arg1: physical location where mutation happen //exon,intron// Arg2: mutated entity // gene // Arg3: changes at molecular level ArgR: changes at phenotype level	Sense = to undergo and cause to undergo mutation Arg0: agent Arg1: entity undergoing mutation

Match to MUTATE senses in WordNet: sense 1 - undergo mutation

Sentence 1.1 The exon 5 **mutated** allele with the premature translation termination resulted in severe deficiency of Hex A.

Pred: mutate
Arg1: exon 5
Arg2: allele
Arg3: [with] the premature translation termination
ArgR: resulted in severe deficiency of Hex A

Sentence 1.2 The gene **mutated** in variant late-infantile neuronal ceroid lipofuscinosis (CLN6) and in nclf mutant mice encodes a novel predicted transmembrane protein.

Pred: mutate
Arg1: -
Arg2: gene
Arg3: [in] variant late-infantile neuronal ceroid lipofuscinosis (CLN6) and in nclf mutant mice
ArgR: encodes a novel predicted transmembrane protein

Sentence 1.3 Transient expression of the exon 8 **mutated** alpha-chain cDNA in COS-1 cells resulted in deficiency of enzymatic activity.

Pred: mutate
Arg1: exon 8
Arg2: alpha-chain cDNA in COS-1 cells
Arg3: -
ArgR: resulted in deficiency of enzymatic activity

Frame 2: Predicate INITIATE

Argument Structure for Biology	PropBank Argument Structure
Arg0: agent //gene// Arg1: entity created //transcription or translation// Arg2: specific location on gene //exon or intron// Arg3: location as tissue or cell Arg4: method	Sense = begin Arg0: agent Arg2: theme (-creation) Arg3: instrument

Match to INITIATE senses in WordNet: sense 1 - bring into being

Sentence 2.1 Apparently HeLa cells either **initiate** transcription at multiple sites within RPS14 exon 1, or capped 5' oligonucleotides are removed from most S14 mRNAs posttranscription.

Pred: initiate
Arg0: -
Arg1: transcription
Arg2: [at] multiple sites within RPS14 exon 1
Arg3: HeLa cells
Arg4: -

Sentence 2.2 I kappa B-epsilon translation **initiates** from an internal ATG codon to give rise to a protein of 45 kDa, which exists as multiple phosphorylated isoforms in resting cells.

Pred: initiate
Arg0: -
Arg1: I kappa B-epsilon translation
Arg2: [from] an internal ATG codon
Arg3: -
Arg4: -

Sentence 2.3 Since RTKs **initiate** signaling by recruiting downstream components to the activated receptor, proteins that are immediately downstream of an activated RTK can be identified by first identifying sequences in the RTK that are necessary to activate downstream signaling (Schlessinger and Ullrich, 1992; Pawson, 1995).

Pred: initiate
Arg0: RTKs
Arg1: signaling
Arg2: -
Arg3: -
Arg4: [by] recruiting downstream components to the activated receptor