



## Basic Editing - Example

### Original text:

Calreticulin (CRT) is an highly conserved chaperone in the endoplasmic reticulum, and also play important roles in innate immunity. Although immune related function of CRT have been reported in vertebrates and invertebrates, the potential functions of teleost CRTs are very limited. In the present study, we characterized two calreticulin-related molecules from tongue sole (*Cynoglossus semilaevis*), calreticulin-like1 and calreticulin-like2, named *CsCRTL1* and *CsCRTL2*, respectively. Signature calreticulin family motifs which were highly conserved in different species were all observed in *CsCRTL1* and *CsCRTL2*. The mRNA transcripts of *CsCRTL1* and *CsCRTL2* were present in all the detected tissues including liver, head kidney, brain, spleen, heart, muscle, skin, intestine and gills. The expression levels of *CsCRTL1* and *CsCRTL2* were higher in liver, head kidney and spleen. After stimulation by *Vibrio anguillarum* and *Streptococcus agalactiae*, the significant upregulations occurred with the expression of *CsCRTL1* and *CsCRTL2*. The different expression patterns depended on the tissue type, pathogen and infection time. Meanwhile, recombinant proteins (rCsCRTL1 and rCsCRTL2) could bind to different PAMPs (pathogen-associated molecular patterns, PAMPs) including LPS, PGN and different bacteria including Gram-negative bacteria *V. anguillarum* and Gram-positive bacterium *Staphylococcus aureus*. Moreover, rCsCRTL1 and rCsCRTL2 significantly enhanced the phagocytosis of *V. anguillarum* by tongue sole macrophages. Our results indicate that *CsCRTL1* and *CsCRTL2* played important roles in anti-bacterial immunity of tongue sole.

### Revision:

Calreticulin (CRT) ~~is an~~ ~~is~~ highly conserved chaperone ~~located~~ in the endoplasmic reticulum, ~~and~~ ~~it~~ ~~also~~ plays important roles in innate immunity. Although ~~various~~ ~~immune-related~~ functions of CRT have been reported in vertebrates and invertebrates, ~~information on~~ the potential functions of teleost CRTs ~~are~~ ~~is~~ very limited. In the present study, we characterized two calreticulin-related molecules from tongue sole (*Cynoglossus semilaevis*), calreticulin-like1 and calreticulin-like2, ~~named~~ ~~—~~ (*CsCRTL1* and *CsCRTL2*, respectively). *CsCRTL1* and *CsCRTL2* contain ~~S~~signature ~~calreticulin~~ family CRT motifs ~~which were~~ ~~that are~~ highly conserved in different species ~~were all observed in~~ *CsCRTL1* and *CsCRTL2*. The mRNA transcripts of *CsCRTL1* and *CsCRTL2* were ~~present in all the detected tissues including~~ ~~expressed in~~ liver, head kidney, brain, spleen, heart, muscle, skin, intestine, and gills. The expression levels of *CsCRTL1* and *CsCRTL2* were ~~higher~~ ~~highest~~ in liver, head kidney, and spleen. After stimulation by *Vibrio anguillarum* and *Streptococcus agalactiae*, *CsCRTL1* and ~~the~~ *CsCRTL2* were significantly up-~~regulations~~ ~~regulated~~ ~~occurred with the~~ ~~expression of~~ *CsCRTL1* and *CsCRTL2*. The different expression patterns depended on the tissue type, pathogen ~~type~~, and infection time. ~~Meanwhile~~ ~~The~~ recombinant proteins (rCsCRTL1 and rCsCRTL2) ~~could bind to~~ ~~bound to~~ different ~~pathogen-associated molecular patterns~~ PAMPs (pathogen associated molecular patterns, PAMPs) including LPS, PGN, and ~~to~~ different bacteria, ~~including such as~~ Gram-negative bacteria *V. anguillarum* and Gram-positive ~~bacterium~~ ~~bacteria~~ *Staphylococcus aureus*. Moreover, rCsCRTL1 and rCsCRTL2 significantly enhanced the ~~phagocytosis~~ ~~killing~~ of *V. anguillarum* by tongue sole macrophages. Our results indicate that *CsCRTL1* and *CsCRTL2* played important roles in anti-~~bacterial~~ ~~bacterial~~ immunity of tongue sole.

**Comment [Query 1]:** Text in blue represents text that had to be written de novo by the Editor.

**Comment [Query 2]:** Text highlighted in yellow represents text that had to be deleted and replaced by new text

**210 words → 31 words were rewritten (>20% of the original text had to be replaced)**

### Edited text:

Calreticulin (CRT) is a highly conserved chaperone located in the endoplasmic reticulum. It plays important roles in innate immunity. Although various immune-related functions of CRT have been reported in vertebrates and invertebrates, information on the potential function of CRT in teleost is very limited. In the present study, we characterized two calreticulin-related molecules from tongue sole (*Cynoglossus*



*semilaevis*), calreticulin-like1 and calreticulin-like2 (*CsCRTL1* and *CsCRTL2*). *CsCRTL1* and *CsCRTL2* contain signature CRT motifs that are highly conserved in different species. *CsCRTL1* and *CsCRTL2* were expressed in liver, head kidney, brain, spleen, heart, muscle, skin, intestine, and gills. The expression levels of *CsCRTL1* and *CsCRTL2* were highest in liver, head kidney, and spleen. After stimulation with *Vibrio anguillarum* and *Streptococcus agalactiae*, *CsCRTL1* and *CsCRTL2* were significantly up-regulated. The expression patterns depended on the tissue type, pathogen type, and infection time. The recombinant proteins r*CsCRTL1* and r*CsCRTL2* bound to different pathogen-associated molecular patterns including LPS, PGN, and to *V. anguillarum* and *S. aureus*. Moreover, r*CsCRTL1* and r*CsCRTL2* significantly enhanced the killing of *V. anguillarum* by tongue sole macrophages. Our results indicate that *CsCRTL1* and *CsCRTL2* play important roles in antibacterial immunity in tongue sole.