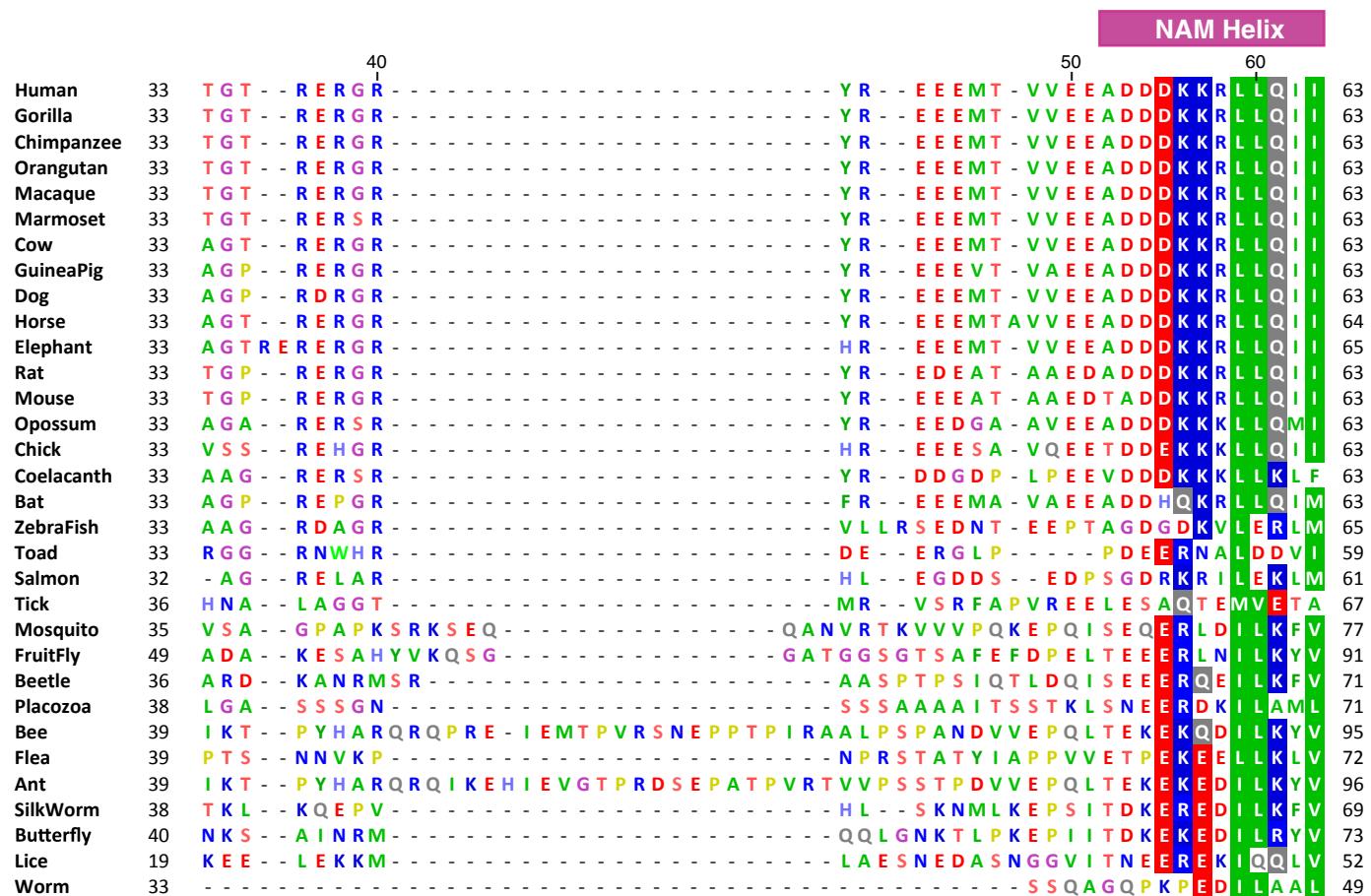
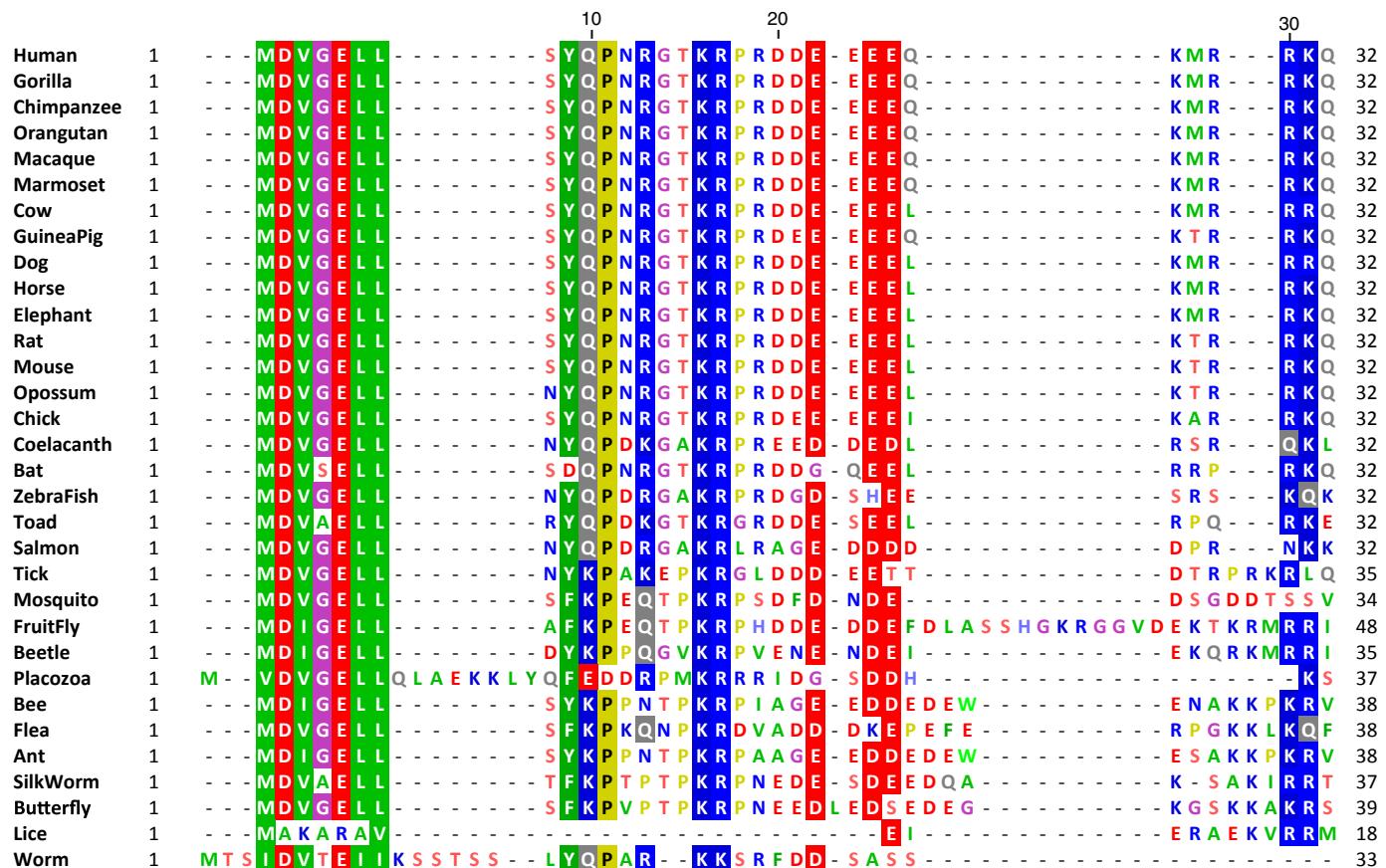


Supplementary Figure 1: Sequence alignment of CTNNBL1 from diverse animal species. Numbering and secondary structures for human CTNNBL1 are shown on top of the alignment. NAM, NTD, ARM, CTD stand for the N-terminal anchoring motif, N-terminal domain, ARM domain, and C-terminal domain respectively. Residues are color-coded based on properties. The highly conserved residues (80% or more) are highlighted by background coloring.



			NTD H1		NTD H2			
		70	80	90	100	110	120	
Human	64	D R D G E E E E E - E E P L D E S S V V K K M I L T F E K R S Y K N Q E L R I K F P D N P E K F M E S E L D L N D I I Q						122
Gorilla	64	D R D G E E E E E - E E P L D E S S V V K K M I L T F E K R S Y K N Q E L R I K F P D N P E K F M E S E L D L N D I I Q						122
Chimpanzee	64	D R D G E E E E E - E E P L D E S S V V K K M I L T F E K R S Y K N Q E L R I K F P D N P E K F M E S E L D L N D I I Q						122
Orangutan	64	D R D G E E E E E - E E P L D E S S V V K K M I L T F E K R S Y K N Q E L R I K F P D N P E K F M E S E L D L N D I I Q						122
Macaque	64	D R D G E E E E E - E E P L D E S S V V K K M I L T F E K R S Y K N Q E L R I K F P D N P E K F M E S E L D L N D I I Q						122
Marmoset	64	D R D G E E E E E - E E P L D E S S V V K K M I L T F E K R S Y K N Q E L R I K F P D N P E K F M E S E L D L N D I I Q						122
Cow	64	D R E G E E E E E - E E P L D E S S V V K K M I L T F E K R S Y K N Q E L R I K F P D N P E K F M E S E L D L N D I I Q						122
GuineaPig	64	D R E G E E E E E - E E P L D E S S V V K K M I L T F E K R S Y K N Q E L R I K F P D N P E K F M E S E L D L N D I I Q						122
Dog	64	D R E G E E E E E - E E P L D E S S V V K K M I L T F E K R S Y K N Q E L R I K F P D N P E K F M E S E L D L N D I I Q						122
Horse	65	D R E G E E E E E - E E P L D E S S V V K K M I L T F E K R S Y K N Q E L R I K F P D N P E K F M E S E L D L N D I I Q						123
Elephant	66	D R E G E E E E E - E E P L D E S S V V K K M I L T F E K R S Y K N Q E L R I K F P D N P E K F M E S E L D L N D I I Q						124
Rat	64	D R D G E E E E E - E E P L D E S S V V K K M I L T F E K R S Y K N Q E L R I K F P D N P E K F M E S E L D L N D I I Q						122
Mouse	64	D R D G E E E E E - E E P L D E S S V V K K M I L T F E K R S Y K N Q E L R I K F P D N P E K F M E S E L D L N D I I Q						122
Opossum	64	D K E G E E E E E - D E P L D E S S V V K K M I L T F E K R S Y K N Q E L R I K F P D N P E K F M E S E L D L N D I I Q						122
Chick	64	E R D G E E E E D E E - E E P L D E S S V V K K M I L T F E K R S Y K N Q E L R I K F P D N P E K F M E S E L D L N D I I Q						122
Coelacanth	64	D K - D V E D E E E - A E P L D E S S V V K K M I L T F E K R S Y K N Q E L R I K F P D N P E K F M E A E L D L N D I I Q						120
Bat	64	D R Q G E E N G E E - E A P L D A S S V V K K M I L T F E K R S Y K N Q E L R I K F P D N P E K F M E Y E L D L N D I I Q						122
ZebraFish	66	D Q - D G E D P E - A E L V D E S T V V K K M I L T F E K R S Y K N Q E L R I K F P D N P E K F M E A E L D L N D I I Q						122
Toad	59	- - - G D D E D E - S E A M D E S A V K R M I L N F E K R S Y K N Q E L R I K F P D N P E K F M E S E L D L N D M I Q						114
Salmon	62	D D D E D A D D Q E - G E P V D E S S V V K K M I L T F E K R S Y K N Q E L R I K F P D T P G R F M E T E L D L N D I I Q						120
Tick	68	E I - - P Q P D A D - I D I L D D T N L K K K L L N F E K K V L K N Q E L R I K Y P D L P E K F M D S E V E L N D I L Q						124
Mosquito	77	- - - E T E E V E G G E V M D E A G L K K K I L L L F E K R V L K N Q E M R I K F P D N P E K F M E S E I E L N D I I Q						133
FruitFly	91	- - - E N E E A D - G D V L D E Q S L K K K L L V F E K R N L K N Q E M R I K F A D S P E K F M D S E V E L H T V I Q						146
Beetle	71	- - - E T E Q T E - G E V I D E A A I K R I V L N F E K R S L K N Q E M R I K F P D S P E K F M E S E L L H E I L Q						126
Placozoa	71	- - - D D E P E - T E S L D S H S L K K K L L S F E K K V S K N Q E M R I K F H P D D P K K F M E S E I E L Y E E I Q						125
Bee	95	- - - E T E A P E - V E A L D E A T L K R M V V L L F E K R A L R N Q E M R V K F P D Q P E K F M E S E V E L H E T L Q						150
Flea	72	- - - E Q D E G - S E S L D E A S L K R M I L N F E K R V L K N Q E L R V K F P D A P E K F M E S E L E L H E A I Q						126
Ant	96	- - - E T E A P E - V E A L D E A T L K R M I V L L F E K R A L R N Q E M R V K F P D Q P E K F M E S E V E L H E T L Q						151
SilkWorm	69	- - - A T E V T E - G E V L D E T T V V K K L V V L N F E K K A L R N R E M R I K F P D Q P D K F M D S E I D L H D A L Q						124
Butterfly	73	- - - E T E A T E - G E V L D D T A V V K K L V V L N F E K K A L R N R E M R I K F P D Q P E K F M E S E I D L F E A L Q						128
Lice	53	D - - E M V M T E - D S V L D D T A V L K K L T F E K R T L K N Q E M R I K F P D N P E K F M E S E V E L H E A I Q						108
Worm	49	- - - E A D Q S N - Y V A L D D V Q V V K K L V I Q L D K K V R L N R E Q R V K N P D D A Q K F M E S E I E L D K A I Q						104

	NTD H2	ARM1 H1	ARM1 H2	ARM1 H3	Extra Helix	
	130	140	150	160	170	
Human	123	E M H V V A T M P D L Y H L L V E L N A V Q S L G L L G H D N T - D - - - V S I A V V D L L Q E L T D I D T L H E				176
Gorilla	123	E M H V V A T M P D L Y H L L V E L N A V Q S L G L L G H D N T - D - - - V S I A V V D L L Q E L T D I D T L H E				176
Chimpanzee	123	E M H V V A T M P D L Y H L L V E L N A V Q S L G L L G H D N T - D - - - V S I A V V D L L Q E L T D I D T L H E				176
Orangutan	123	E M H V V A T M P D L Y H L L V E L N A V Q S L G L L G H D N T - D - - - V S I A V V D L L Q E L T D I D T L H E				176
Macaque	123	E M H V V A T M P D L Y H L L V E L N A V Q S L G L L G H D N T - D - - - V S I A V V D L L Q E L T D I D T L H E				176
Marmoset	123	E M H V V A T M P D L Y H L L V E L N A V Q S L G L L G H D N T - D - - - V S I A V V D L L Q E L T D I D T L H E				176
Cow	123	E M H V V A T M P D L Y H L L V E L N A V Q S L G L L G H D N T - D - - - V S I A V V D L L Q E L T D I D T L H E				176
GuineaPig	123	E M H V V A T M P D L Y H L L V E L N A V Q S L G L L G H D N T - D - - - V S I A V V D L L Q E L T D I D T L H E				176
Dog	123	E M H V V A T M P D L Y H L L V E L N A V Q S L G L L G H D N T - D - - - I L S A V V D L L Q E L T D I D T L H E				176
Horse	124	E M H V V A T M P D L Y H L L V E L N A V Q S L G L L G H D N T - D - - - I L S A V V D L L Q E L T D I D T L H E				177
Elephant	125	E M H V V A T M P D L Y H L L V E L N A V Q S L G L L G H D N T - D - - - V S I A V V D L L Q E L T D I D T L H E				178
Rat	123	E M H V V A T M P D L Y H L L V E L S A V Q S L G L L G H D N T - D - - - V S I A V V D L L Q E L T D I D T L H E				176
Mouse	123	E M H V V A T M P D L Y H L L V E L S A V Q S L G L L G H D N T - D - - - V S I A V V D L L Q E L T D I D T L H E				176
Opossum	123	E M H V V A T M P D L Y H L L V E L N A V Q S L G L L G H D N T - D I L T F L V S I A V V D L L Q E L T D I D T L H E				181
Chick	123	E M H V I A T M P D L Y H L L V E L N A V Q S L G L L G H D N T - D A H - - - V S I A V V D L L Q E L T D I D T L H E				177
Coelacanth	121	E M H V I A T M P D L Y H L L V E L N A V H S L L G L L S H E N T - D - - - I S I A V V D L L Q E L T D I D T L H E				174
Bat	123	E M H V V A T T P D L Y H L L V E L N A V Q S L G L L R H D N T - D - - - V S I A V V D L L Q E L T D V D T L H E				176
ZebraFish	123	E M H V I A T P E L Y H L L V E L N A V Q S L G L L S H D N T - D - - - I S I A V V D L L Q E L T D I D T L H E				176
Toad	115	E M H V I A T P D L Y H L L V E L N A V Q S L G L L S H D N S - D - - - V C I A V V D L L Q E L T D I D T L H E				168
Salmon	121	E M H V A T M P D L Y H L L V E L N A V H S L L G L L S H E N T - D - - - I A I A V V D L L Q E L T D I D T L H E				174
Tick	125	E M H V V A T Q P E L Y P I L V E L N A V Q S L G L L S H E N T - D - - - I S I A V V D L L Q E L T D V D S L H E				178
Mosquito	134	E L H A V A T V P D L Y P I L V E L N G V S S L L E L L S H Q N T - D - - - I S V A V V H L L Q E L T D V D I L H E				187
FruitFly	147	E L K G V A T V P D L Y P I L V D L H G L H S L L E L L A H Q N T - D - - - I A V A V V D L L Q E L T D V D I L G E				200
Beetle	127	E M R V I S T A P D Y P I L V K L Q V I P S L L E L L A H D N T - D - - - V A V A T V E L L Q E L T D V D I L H E				180
Placozoa	126	K L N V I A T A P E L Y P Q L V E L N T I K S F V D L L T H D N S - D - - - I S I A V V D L L Q E M T D V D S L H E				179
Bee	151	E I H V V A T N P D L Y P L M V E L G A V P S L L E L L S H E N T - D - - - I A V G V V D L L Q E L T D V D I L H E				204
Flea	127	L M H A L A T V P E L Y T V G V E Q K L I P T L L G L L S H D N T - D - - - I S V A V V N L L Q E L T D I D T L N E				180
Ant	152	E L H I I A A N P D L Y Q L M V E L G A V P S L L E L L S H E N T - D - - - I A V G V V D L L Q E L T D V D I L H E				205
SilkWorm	125	D L S A V A T V P D Q Y P I L V E L K C I N S L L E L L S H D N T - D - - - V S T K V V Q L L Q E M T D V D I L H E				178
Butterfly	129	D L S A V A T V P D Q Y P I L V E L K C I N S L L E L L S H D N T - D - - - V S T K V V N L L Q E L T D V D I L H E				182
Lice	109	E L H V V A T V P D L Y P V L V Q V N A I N S L L E L L S H E N T - D - - - I A V A -				146
Worm	105	E M H S L A S Q P D L Y G S F V E V N G V E I L L Q L L G H E N T - D - - - I V C A T L S L L R E L T D D D V M N E				158

		ARM2 H1	ARM2 H2	ARM2 H3	
		180	190	200	210
Human	177	S E E G A E V L I D A L	- V D G Q V V A L L V Q N L E R L D E S	V K E E A D G V H N T L A I V E N M A E F R P E M C T	234
Gorilla	177	S E E G A E V L I D A L	- V D G Q V V A L L V Q N L E R L D E S	V K E E A D G V H N T L A I V E N M A E F R P E M C T	234
Chimpanzee	177	S E E G A E V L I D A L	- V D G Q V V A L L V Q N L E R L D E S	V K E E A D G V H N T L A I V E N M A E F R P E M C T	234
Orangutan	177	S E E G A E V L I D A L	- V D G Q V V A L L V Q N L E R L D E S	V K E E A D G V H N T L A I V E N M A E F R P E M C T	234
Macaque	177	S E E G A E V L I D A L	- V D G Q V V A L L V Q N L E R L D E S	V K E E A D G V H N T L A I V E N M A E F R P E M C T	234
Marmoset	177	S E E G A E V L I D A L	- V D G Q V V A L L V Q N L E R L D E S	V K E E A D G V H N T L A I V E N M A E F R P E M C T	234
Cow	177	S E E G A E V L I D A L T	- V D G Q V V A L L V Q N L E R L D E S	V K E E A D G V H N T L A I V E N M A E F R P E M C T	234
GuineaPig	177	S E E G A E V L I D A L	- V D G Q V V A L L V Q N L E R L D E S	V R E E A D G V H N T L A I V E N M A E F R P E M C T	234
Dog	177	S E E G A E V L I D A L L K	V D G Q V V A L L V Q N L E R L D E S	V K E E A D G V H N T L A I V E N M A E F R P E M C T	236
Horse	178	S E E G A E V L I D A L	- V D G Q V V A L L V Q N L E R L D E S	V K E E A D G V H N T L A I V E N M A E F R P E M C T	235
Elephant	179	S E E G A E V L I D A L	- V D G Q V V A L L V Q N L E R L D E S	V K E E A D G V H N T L A I V E N M A E F R P E V C A	236
Rat	177	S E E G A E V L I D A L	- V D G Q V V A L L V Q N L E R L D E S	V R E E A D G V H N T L A I V E N M A E F R P E M C T	234
Mouse	177	S E E G A E V L I D A L	- V D G Q V V A L L V Q N L E R L D E S	V R E E A D G V H N T L A I V E N M A E F R P E M C T	234
Opossum	182	S E E G A E V L I D A L	- V D G Q V V A L L V Q N L E R L D E S	V K E E A D G V H N T L A I V E N M A E F R P E M C T	239
Chick	178	S E E G A E V L I D A L	- V E G Q V V A L L V Q N L E R L D E S	V K E E A D G V H N T L A I V E N M A E F R P E M C T	235
Coelacanth	175	S E E G A E V L I D A L	- L E G Q V V A L L V Q N L E R L D E L	V K E E A D G V H N T L A I I E N V A E F R P E M C T	232
Bat	177	S E E G A E V L I D A L T	- V A G Q V V A L L V Q N L E R L D E S	S G R E E A Q G V H N T L A I V E N M A E F R P Q L C T	234
ZebraFish	177	S E E G A E V L I D A L	- L E G Q V V A L M V Q N M E R L D E T	V K E E A D G V Y N T L A V I E N M A E F R P G L C T	234
Toad	169	S E E G A Q V V I D A L	- L E G Q V V A L L V Q N L E R L D E S	V K E E S D G V H N T L A I I E N M T E F R P E I C S	226
Salmon	175	S E E G A E V L I D S L	- L E G Q V V A L L V Q N M E R L D E Q	V K E E A D G V Y N T L A T I E N M A E F K P G L C T	232
Tick	179	S Q E G A D M I D A L	- I D G Q I V A Q L V Q N L D R L D E T	I K E E A E G V H N T L A I I E N L T E F R P D L S V	236
Mosquito	188	S L E G A E T L I E A L	- R N Q Q A A G L L V Q N L E K L D E G	V K E E A D G V H N T M A I F E N L M E I K S E I A K	245
FruitFly	201	S Q E G A E S L I E A L	- R K E Q I C A L L V Q N L E R L D E K	V K E E A D G V H N T L A I V E N L T E I D S E F V K	258
Beetle	181	S E E G A E A L I D A L	- L D H Q V I C A L L V Q N L E R L D E K	V K E E A D G V H N S L S I I E N L T E L R N D I C N	238
Placozoa	180	S H E G A V A L I D V L	- V E N Q V I T L L I Q N I E R I N D S I R E E A D G V H N T L A I I E N L T E F K P E L S T	237	
Bee	205	S Q E G A D T L I D A L	- L E Q Q V C A L L V Q N L E R L D E S	V K E E S D G V Y N T L A I F E N L L E F R P E L C A	262
Flea	181	S Q D E A A I I I D A L	- L D Q Q I C A L L V H N L E R L D E Q	V K E E S D G V H N T L A I V E N L T E I R P E V C Q	238
Ant	206	S Q E G A D T L I D A L	- L E Q Q V C A L L V Q N L E R L D E M	V K E E S D G V Y N T L A I F E N L L E F R P D L C T	263
SilkWorm	179	S E E G A E D L I N A M	- A E A E A P A L L H N L T R L D E Q	V P D E R D A V H N T L G I I D N I T E F R P E L C I	236
Butterfly	183	S E E G A E E L I N A L	- A E A E C P S L L H N L A R L D E Q	V P D E R D A V H N T L G I I E N I T E F R P E M C V	240
Lice	147	S K E G A D S L I D A L	- L N Q Q V C A L L V Q N L E R L D E S	V K E E A E G V H N T L A I F E N L T E F R P Q I C A	204
Worm	159	G E D G A A E L I E S L	- V S G S I I T T L L A C V E R L D E S	V K D E A D G V H N A L G V V D N M I G F R D D I T E	216

	ARM3 H1	ARM3 H2	ARM3 H3	ARM4 H1	ARM4 H2	
	240	250	260	270	280	
Human	235	E G A A Q Q G L L Q W L L K R L K A K M	P F D A N K L Y C S E V L A I L L Q D N D E N R E	E L L G E	- L D G I D V L L Q Q	
Gorilla	235	E G A A Q Q G L L Q W L L K R L K A K M	P F D A N K L Y C S E V L A I L L Q D N D E N R E	E L L G E	- L D G I D V L L Q Q	
Chimpanzee	235	E G A A Q Q G L L Q W L L K R L K A K M	P F D A N K L Y C S E V L A I L L Q D N D E N R E	E L L G E	- L D G I D V L L Q Q	
Orangutan	235	E G A A Q Q G L L Q W L L K R L K A K M	P F D A N K L Y C S E V L A I L L Q D N D E N R E	E L L G E	- L D G I D V L L Q Q	
Macaque	235	D G A A Q Q G L L Q W L L K R L K A K M	P F D A N K L Y C S E V L A I L L Q D N D E N R E	E L L G E	- L D G I D V L L Q Q	
Marmoset	235	E G A A Q Q G L L Q W L L K R L K A K M	P F D A N K L Y C S E V L A I L L Q D N D E N R E	E L L G E	- L D G I D V L L Q Q	
Cow	235	E A A Q Q G L L Q W L L K R L K A K M	P F D A N K L Y C S E V L A I L L Q D N D E N R E	E L L G E	- L D G I D V L L Q Q	
GuineaPig	235	E A A Q Q G L L Q W L L K R L K A K M	P F D A N K L Y C S E V L A I L L Q D N D E N R E	E L L G E	- L D G I D V L L Q Q	
Dog	237	E A A Q Q G L L Q W L L K R L K A K M	P F D A N K L Y C S E V L A I L L Q D N D E N R E	E L L G E	- L D G I D V L L Q Q	
Horse	236	E A A Q Q G L L Q W L L K R L K A K M	P F D A N K L Y C S E V L A I L L Q D N D E N R E	E L L G E	- L D G I D V L L Q Q	
Elephant	237	E A A Q Q G L L Q W L L K R L K A K M	P F D A N K L Y C S E V L A I L L Q D N D E N R E	E L L G E	- L D G I D V L L Q Q	
Rat	235	E A A Q Q G L L Q W L L K R L K A K M	P F D A N K L Y C S E V L A I L L Q D N D E N R E	E L L G E	- L D G I D V L L Q Q	
Mouse	235	E A A Q Q G L L Q W L L K R L K A K M	P F D A N K L Y C S E V L A I L L Q D N D E N R E	E L L G E	- L D G I D V L L Q Q	
Opossum	240	E A A Q Q G L M Q W L L K R L K A K M	P F D A N K L Y C S E V L A I L L Q D N D N R E	E L L G E	- L D G I D V L L Q Q	
Chick	236	E A A Q Q G L M Q W L L K R L K A K M	P F D A N K L Y C S E V L A I L L Q D N D N R E	E L L G E	- L D G I D V L L Q Q	
Coelacanth	233	D A A Q Q G L L T Q W L L K R I K A K M	P F D A N K L Y C S E I L A I L L Q N D S N R E	E L L G E	- L D G I D V L L Q Q	
Bat	235	E A A R Q G L L Q W L L K R L K A K M	P F D A N K L Y C S E V L A I L L Q D S D A N R E	E L L G E	- L D G I D V L L Q Q	
ZebraFish	235	E A A Q Q G L M Q W L L K R I K A K M	P F D A N K L Y C S E I L A I L L Q N D K T R E	E L L G E	- M D G I D V L L Q Q	
Toad	227	D A A Q Q G L L H W L L K R L K A K M	P F D A N K L Y C S E I L A I L L Q N D D T R G L L G E	-	- L D G I D V L L Q Q	
Salmon	233	E A A Q Q G L M Q W L L K R I K A K I	P F D A N K L Y C S E V L A I L L Q N N D S T R E	E L L G E	- L D G I D V L L Q Q	
Tick	237	Q A A Q Q G L L A W L L K R L K V K M	P F D A N K L Y C S E I L A I L L Q N H D E N K R L L G E	-	- I D G I D T L L Q Q	
Mosquito	246	E I A E Q G L M Q W L L K R L R M K M	P F D A N K L Y C S E I M S I L L Q D T N E N R L L G N	-	- I D G I D V L L Q Q	
FruitFly	259	E A A E Q G L L A W L L K R L R G K S	P F D P N K L Y C S E I L S I L I Q T E N E N R L L G S	-	- L D G I D V L L Q Q	
Beetle	239	E A T K Q G L L Q W L L K R L K V K A	P F D A N K L Y A S E L L S I L L Q D N E K N R T A L G E	-	- M D G I D T L L Q Q	
Placozoa	238	E A A N Q G L M Q W L L R S L V A K R T Y D A N K A Y S C E I L A V L L Q G H E G N R T L L G E	-	- L E G I D T L L Q I	296	
Bee	263	D A G K Q G L M Q W L L R I K A K T	P F D A N K L Y A S E L L S I L L Q N T P E N R L L G E	-	- L D G I D V L L Q Q	320
Flea	239	Q A A Q Q G L L S W I M K R L G A K L	P F D A N K L Y C S E I L S I L L Q G T P E N R Q L L G E	-	- I D G I D I L L Q Q	296
Ant	264	D A G K Q G L M Q W L L R I K T K T	P F D A N K L Y A S E L L S I L L Q H T P E N R L L G D	-	- L D G I D V L L Q Q	321
SilkWorm	237	E V A K Q G F L Q W I L K R L K V K L	P F D G N K L Y A T E I I L S I L L Q N T P E N R K L L G E	-	- L D G I D V L L Q Q	294
Butterfly	241	E V A K Q G F I Q W I L K R L R V K L	P F D G N K L Y A T E I I L S I L L Q N T P E N R K L L G E	-	- L D G I D V L L Q Q	295
Lice	205	N A A K Q G L F S W L L K R L R V K L	P F D A N K L Y A S E I L S I L L Q N T P E N R E L I G E	-	- L D G I D V L L Q Q	262
Worm	217	E C V K H G F T V W L L K R C F Q K G	A F D A N K M Y A S E L L S V I L Q T S D T A K A K L T E K I D G I D I L L R T	-	-	275

		CTD H6				CTD H7					
		530	540	550	560	530	540	550	560		
Human	529	V R H I I K E Y A E N I G D G R S P E F R E N E Q K R I I L G L L E N - - - - -				F - -				563	
Gorilla	529	V R H I I K E Y A E N I G D G R S P E F R E N E Q K R I I L G L L E N - - - - -				F - -				563	
Chimpanzee	529	V R H I I K E Y A E N I G D G R S P E F R E N E Q K R I I L G L L E N - - - - -				F - -				563	
Orangutan	529	V R H I I K E Y A E N I G D G R S P E F R E N E Q K R I I L G L L E N - - - - -				F - -				563	
Macaque	529	V R H I I K E Y A E N I G D G R S P E F R E N E Q K R I I L G L L E N - - - - -				F - -				563	
Marmoset	529	V R H I I K E Y A E N I G D G R S P E F R E N E Q K R I I L G L L E N - - - - -				F - -				563	
Cow	529	V R H I I K E Y A E N I G D G R S P E F R E N E Q K R I I L A L L E N - - - - -				F - -				563	
GuineaPig	529	V R H I I K E Y A E N I G D G R S P E F R D T E Q K R I I L G L L E N - - - - -				F - -				563	
Dog	531	V R H I I K E Y A E N I G D G R S P E F R E N E Q K R I I L G L L E N - - - - -				F - -				565	
Horse	530	V R H I I K E Y A E N I G D G R S A E F R E N E Q K R I I L G L L E N - - - - -				F - -				564	
Elephant	531	V R H I I K E Y A E N I G D G R S P E F R E N E Q K R I I L G L L E N - - - - -				F - -				565	
Rat	529	V R H I I K E Y A E N I G D G R S P E F R E T E Q K R I I L G L L E N - - - - -				F - -				563	
Mouse	529	V R H I I K E Y A E N I G D G R S P E F R E T E Q K R I I L A L L E N - - - - -				F - -				563	
Opossum	534	V R H I I K E Y A E N I G D G K N Q E F R E N E Q K R I I L E L L E N - - - - -				F - -				568	
Chick	530	V R H I I K E Y A E N I G D G K N Q E F R E S E Q K R I I M D L L E N - - - - -				F - -				564	
Coelacanth	527	V R H I M K E Y A E N I G D G K S D E F R E N E Q K R I I L D L L E N - - - - -				F S H				563	
Bat	529	V R H I V K E Y A E N I G E G P G Q D F Q E S E Q K R I I L G L L D N - - - - -				F - -				563	
ZebraFish	529	V R H I M R E Y A E N I G D G K S E E F K E S E Q K R I I M E L L E N - - - - -				F - -				563	
Toad	521	M R H I I L K E Y A S E S I G D G K S E E F R E S E Q K R I I Q E L L E T - - - - -				L - -				555	
Salmon	527	V R H I M R E Y A E N I G D G K S E E F K E S E Q K R I I M D L L E N - - - - -				F - -				561	
Tick	531	I R N I M R E Y A G N L G D A K D E S L K E V E Q Q R I I L Q L V D R - - - - -				F - -				565	
Mosquito	532	I R H V M R E Y A G N L G D A G D S D W R E Q E Q A H I I Q L V D R - - - - -				F - -				566	
FruitFly	548	I R S I M R E Y A G N L G D - G D T D W R E Q E Q N H I I L S L V D R - - - - -				F - -				581	
Beetle	523	I R H I M R E Y A G N L G D E G D K E W R D Q E Q Q H I I L H L V D K - - - - -				F - -				557	
Placozoa	533	V K D I M R E Y A S Q I G D A N S K D S K D A E Q R R I I L S L I D R - - - - -				F - -				567	
Bee	544	I R H I M R E Y A G N L G D A G D S E W R E A E Q Q H I I L Q L I D K - - - - -				F - -				578	
Flea	523	I R E I M R E Y A G N L G D G S E S E A K E E E K Q H I I L Q L L D K - - - - -				F - -				557	
Ant	545	I R H I M R E Y A G N L G D A G D T E W K E A E Q Q H I I L Q L I D K - - - - -				F - -				579	
SilkWorm	519	I R H V M R E Y A G N L G D A G S S E E W R Q E E Q Q H I I L Q L V D K - - - - -				F - -				553	
Butterfly	520	I R H V M R E Y A G N L G D A G S S E D W R H Q E E Q Q H I I L Q L V D K - - - - -				F - -				554	
Lice	493	I R H I M R - - - G N L G E S G N D E A K Q K E E Q Y I I H V L S L L C T R L S F I D I F - -				-				534	
Worm	510	L C P I I Q E Y S D N L G D D A N - - - - I E Q E R V L V M L S K - - - - I E D F Y K				-				544	

Figure S2: **a)** Preparation of the full-length CTNNBL1 and CTNNBL1^{SF} protein samples. Lane 1: overexpressed full-length CTNNBL1 in the supernatant; lane 2: full-length CTNNBL1 after purification by NTA resin; lane 3: full-length CTNNBL1 after the fusion tag was cleaved by HRV 3C protease; lane 4: full-length CTNNBL1 after the fusion tag was separated from the target protein; lane 5: pure full-length CTNNBL1 after purification by SP-Sepharose chromatography; lane 6: pure CTNNBL1^{SF} after purification by SP-Sepharose chromatography. **b)** Verifying the presence of full-length protein in crystals. Lane 1: full-length CTNNBL1 before crystallization; lane 2: protein sample from washed and re-dissolved crystals.

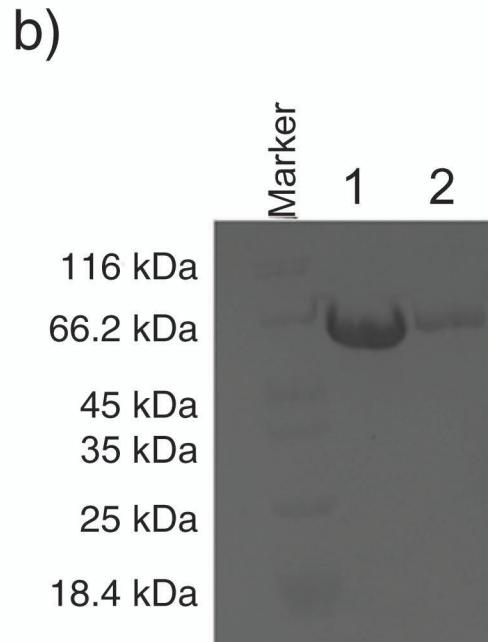
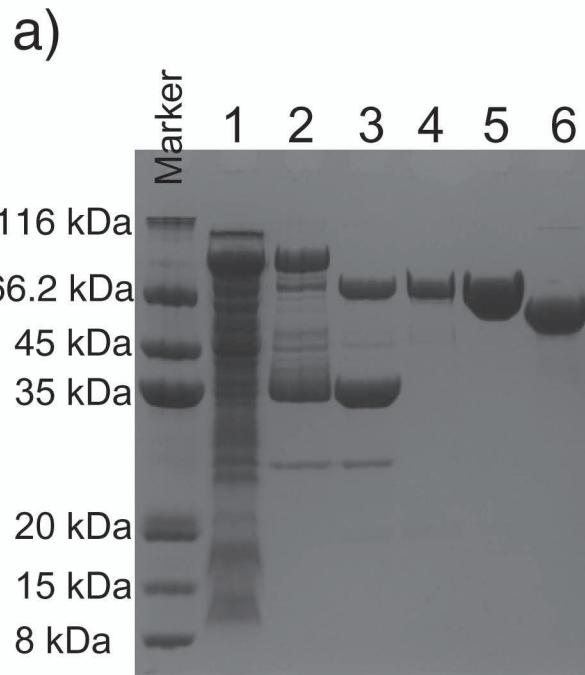


Figure S3: Superimposition of the structures of full-length CTNNBL1 (red) and CTNNBL1^{SF} (blue). NAM, N-terminal anchoring motif; NTD, N-terminal domain; ARM, armadillo domain; CTD, C-terminal domain. The numbers 1-6 indicate the six ARM repeats within the ARM domain.

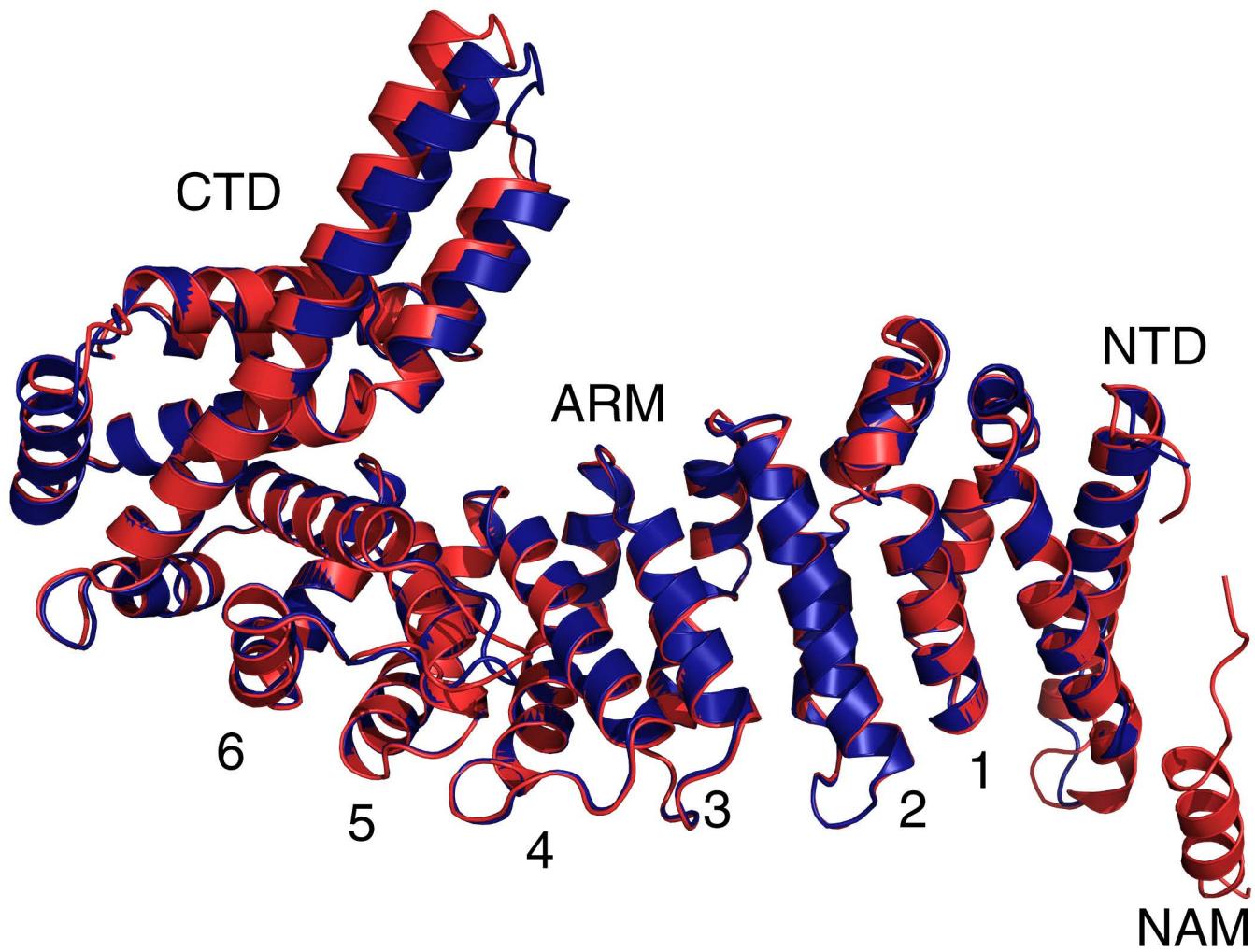


Figure S4: Comparison of the structures of CTNNBL1 and p115 (pdb code 2W3C).

