

Supplementary Materials

A

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TRINITY_DN33848      1  -QIFVKTLPGKTTITLEVEPSDTIENVKSNIQDKEGIPPDQORLIFSCKQLEDGRTLVDYN
AAH25894.1           1  MQIFVKTLTGKTTITLEVEPSDTIENVKAKIQDKEGIPPDQORLIFAGKQLEDGRTLSDYN
NP_001284937.1       1  MQIFVKTLTGKTTITLEVEPSDTIENVKAKIQDKEGIPPDQORLIFAGKQLEDGRTLSDYN
PIK46166.1           1  MQIFVKTLTGKTTITLEVEPSDTIENVKSKIQDKEGIPPDQORLIFAGKQLEDGRTLSDYN

TRINITY_DN33848      60  TQKEATLHLVLRRLGGMQIFVKTLPGKTTITLEVEPSDTIENVKSNIQDKEGIPPDQORLI
AAH25894.1           61  IQKESTLHLVLRRLGGMQIFVKTLTGKTTITLEVEPSDTIENVKAKIQDKEGIPPDQORLI
NP_001284937.1       61  IQKESTLHLVLRRLGGMQIFVKTLTGKTTITLEVEPSDTIENVKAKIQDKEGIPPDQORLI
PIK46166.1           61  IQKESTLHLVLRRLGGMQIFVKTLTGKTTITLEVEPSDTIENVKSKIQDKEGIPPDQORLI

TRINITY_DN33848      120  FSGKQLEDGRTLVDYNIQKEATLHLVLRRLGGMQIFVKTLTGKTTITLEVEPSDTIENVKT
AAH25894.1           121  FAGKQLEDGRTLSDYNIQKESTLHLVLRRLGGMQIFVKTLTGKTTITLEVEPSDTIENVKA
NP_001284937.1       121  FAGKQLEDGRTLSDYNIQKESTLHLVLRRLGGMQIFVKTLTGKTTITLEVEPSDTIENVKA
PIK46166.1           121  FAGKQLEDGRTLSDYNIQKESTLHLVLRRLGGMQIFVKTLTGKTTITLEVEPSDTIENVKS

TRINITY_DN33848      180  KNODKQGIP-----
AAH25894.1           181  KIQDKEGIP-----
NP_001284937.1       181  KIQDKEGIPPDQORLI-FAGKQL-----EDGRTLSDYNIQKESTLHLVLRRLRG
PIK46166.1           181  KIQDKEGIPQISSVLSILVSSSRTEGRYPTTTSRKSPHSILSFVSVKKESTLHLVLRRLRG

TRINITY_DN33848      189  -----P-----YQQRKI
AAH25894.1           190  -----P-----DQORLI
NP_001284937.1       228  GMQIFVKTLTGKTTITLEVEPSDTIENVKAKIQDKEGIPP-----DQORLI
PIK46166.1           241  GMQIFVKTLTGKTTITLEVEPSDTIENVKSKIQDKEGIPPDQORLIFAGQGRYSPDQORLI

TRINITY_DN33848      196  FAGFELDDGRTLSDYNIQKESTLHLVLRRLGGMQIFDKTLTGKTTITLEVEPSDTIENVKT
AAH25894.1           197  FAGKQLEDGRTLSDYNIQKESTLHLVLRRLGGMQIFVKTLTGKTTITLEVEPSDTIENVKA
NP_001284937.1       273  FAGKQLEDGRTLSDYNIQKESTLHLVLRRLGGMQIFVKTLTGKTTITLEVEPSDTIENVKA
PIK46166.1           301  FAGKQLEDGRTLSDYNIQKESTLHLVLRRLGGMQIFVKTLTGKTTITLEVEPSDTIENVKS

TRINITY_DN33848      256  K-----
AAH25894.1           257  K-----
NP_001284937.1       333  KIQDKEGIPPDQORLIFAGKQLEDGRTLSDYNIQKESTLHLVLRRLGGMQIFVKTLTGKT
PIK46166.1           361  KIQDKEGIPPDQORLIFADL-----CQNSDWQD

TRINITY_DN33848      257  -----NODKQGIPFYQQRKIFAGFELDDGRTLSDYNIQKESTLHLVLR
AAH25894.1           258  -----IQDKEGIPPDQORLIFAGKQLEDGRTLSDYNIQKESTLHLVLR
NP_001284937.1       393  TLEVEPSDTIENVKAKIQDKEGIPPDQORLIFAGKQLEDGRTLSDYNIQKESTLHLVLR
PIK46166.1           389  HTLEVEPSDTIENVKSKIQDKEGIPPDQORLIFAGKQLEDGRTLSDYNIQKESTLHLVLR

TRINITY_DN33848      300  LRGGMQIFDKTLTGKT-----
AAH25894.1           301  LRGGMQIFVKTLTGKTTITLEVEPSVTTKKVKQEDRRTFLTTSVSKSPACACSW-----
NP_001284937.1       453  LRGGMQIFVKTLTGKTTITLEVEPSDTIENVKAKIQ-----DKEGIPPDQORLIFAGKQL
PIK46166.1           449  LRGGMQIFVKTLTGKTTITLEVEPSDTIENVNPKSG-----QGRYSFDHSVSSILVNN--

TRINITY_DN33848      -----
AAH25894.1           354  -----V
NP_001284937.1       507  EDGRTLSDYNIQKESTLHLVLRRLGGAI-----
PIK46166.1           -----

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B

TRINITY_DN43805	1	ADGRSLYDFNLPKESTHVVLRIRGCMQIFVNTLTGKTITLEVETS	SDTIENVKSKIQDKE
AAA28997.1	1	MQIFVKTLTGKTITLEVEPSDTIENVKAKIQDKEGIPPDQQR	LIFAGKQLEDGRTLSDYN
AAH08661.1	1	MQIFVKTLTGKTITLEVEPSDTIENVKAKIQDKEGIPPDQQR	LIFAGKQLEDGRTLSDYN
PIK45544.1	1	MQIFVKTLTGKTITLEVEPSDTIENVKSKIQDKEGIPPDQQR	LIFAGKQLEDGRTLSDYN

TRINITY_DN43805	61	GIPPDQQRLLIFPGKQLEDGRTQYQTNIHNETTRQ-PNRYTE	-----
AAA28997.1	61	IQESTLHLVLRRLRGGMQIFVKTLTGKTITLEVEPSDTIENVKAKIQDKEGIPPDQQR	LIFAGKQLEDGRTLSDYN
AAH08661.1	61	IQESTLHLVLRRLRGGMQIFVKTLTGKTITLEVEPSDTIENVKAKIQDKEGIPPDQQR	LIFAGKQLEDGRTLSDYN
PIK45544.1	61	IQESTLHLVLRRLRGGMQIFVKTLTGKTITLEVEPSDTIENVKSKIQDKEGIPPDQQR	LIFAGKQLEDGRTLSDYN

TRINITY_DN43805	121	FAGKQLEDGRTLSDYNIQESTLHLVLRRLRGGMQIFVKTLTGKTITLEVEPSDTIENVKAKIQDKEGIPPDQQR	LIFAGKQLEDGRTLSDYN
AAA28997.1	121	FAGKQLEDGRTLSDYNIQESTLHLVLRRLRGGMQIFVKTLTGKTITLEVEPSDTIENVKAKIQDKEGIPPDQQR	LIFAGKQLEDGRTLSDYN
AAH08661.1	121	FAGKQLEDGRTLSDYNIQESTLHLVLRRLRGGMQIFVKTLTGKTITLEVEPSDTIENVKAKIQDKEGIPPDQQR	LIFAGKQLEDGRTLSDYN
PIK45544.1	121	FAGKQLEDGRTLSDYNIQESTLHLVLRRLRGGMQIFVKTLTGKTITLEVEPSDTIENVKAKIQDKEGIPPDQQR	LIFAGKQLEDGRTLSDYN

TRINITY_DN43805	181	KIQDKEGIPPDQQRLLIFAGKQLEDGRTLSDYNIQESTLHLVLRRLRGGIQA	-----
AAA28997.1	181	EDRRTFLTTVSKKSPPCACSWV	-----
AAH08661.1	181	KIQDKEGIPPDQQRLLIFAGKQLEDGRTLSDYNIQESTLHLVLRRLRGGIQA	-----
PIK45544.1	181	KIQDKEGIPPDQQRLLIFAGKQLEDGRTLSDYNIQESTLHLVLRRLRGGIQA	-----

C

TRINITY_DN16432	1	----VKTTLTGKTITLDVEPSDTIENVKSKIQDKEGIPPDQQRSLIFAGKQLEDGRTLSDYN
BAB22630.1	1	MQIFVKTLTGKTITLEVEPSDTIENVKAKIQDKEGIPPDQQRLLIFAGKQLEDGRTLSDYN
AAA28997.1	1	MQIFVKTLTGKTITLEVEPSDTIENVKAKIQDKEGIPPDQQRLLIFAGKQLEDGRTLSDYN
PIK45544.1	1	MQIFVKTLTGKTITLEVEPSDTIENVKSKIQDKEGIPPDQQRLLIFAGKQLEDGRTLSDYN

TRINITY_DN16432	57	IQESTLHLVLRRLRGGMQIFVKTLTGKTITLDVEPSDTIENVKSKIQDKEGIPPDQQRSLIFAGKQLEDGRTLSDYN
BAB22630.1	61	IQESTLHLVLRRLRGGMQIFVKTLTGKTITLEVEPSDTIENVKAKIQDKEGIPPDQQRLLIFAGKQLEDGRTLSDYN
AAA28997.1	61	IQESTLHLVLRRLRGGMQIFVKTLTGKTITLEVEPSDTIENVKAKIQDKEGIPPDQQRLLIFAGKQLEDGRTLSDYN
PIK45544.1	61	IQESTLHLVLRRLRGGMQIFVKTLTGKTITLEVEPSDTIENVKSKIQDKEGIPPDQQRLLIFAGKQLEDGRTLSDYN

TRINITY_DN16432	117	FAGKQLEDGRTLSDYNIQESTLHLVLRRLRGGMQIFVKTLTGKTITLDVEPSDTIENVKAKIQDKEGIPPDQQRLLIFAGKQLEDGRTLSDYN
BAB22630.1	121	FAGKQLEDGRTLSDYNIQESTLHLVLRRLRGGMQIFVKTLTGKTITLEVEPSDTIENVKAKIQDKEGIPPDQQRLLIFAGKQLEDGRTLSDYN
AAA28997.1	121	FAGKQLEDGRTLSDYNIQESTLHLVLRRLRGGMQIFVKTLTGKTITLEVEPSDTIENVKAKIQDKEGIPPDQQRLLIFAGKQLEDGRTLSDYN
PIK45544.1	121	FAGKQLEDGRTLSDYNIQESTLHLVLRRLRGGMQIFVKTLTGKTITLEVEPSDTIENVKAKIQDKEGIPPDQQRLLIFAGKQLEDGRTLSDYN

TRINITY_DN16432	177	KNQD-----
BAB22630.1	181	KIQDKEGIPPDQQRLLIFAGKQLEDGRTLSDYNIQESTLHLVLRRLRGGY--
AAA28997.1	181	KIQDKEGIPPDQQRLLIFAGKQLEDGRTLSDYNIQESTLHLVLRRLRGGIQA
PIK45544.1	181	KIQDKEGIPPDQQRLLIFAGKQLEDGRTLSDYNIQESTLHLVLRRLRGGIQA

D

TRINITY_DN52789	1	MIQKES	TLHLVLRRLRGGMQFFVKTLTGKT	ITLEVEPSDTIENLKY	KIQDKKGIPQDQNR
AAH19850.1	1	MQIFVKTLTGKT	ITLEVEPSDTIENVKAKIQDKEGIPPDQORLIFAGKQLEDGRTLSDYN		
NP_001284937.1	1	MQIFVKTLTGKT	ITLEVEPSDTIENVKAKIQDKEGIPPDQORLIFAGKQLEDGRTLSDYN		
PIK45544.1	1	MQIFVKTLTGKT	ITLEVEPSDTIENVKSKIQDKEGIPPDQORLIFAGKQLEDGRTLSDYN		
TRINITY_DN52789	61	IFDGKQLEDGRTL	SVYMIQKES	TLHLVLRRLRGGMQFFVKTLTGKT	ITLEVEPSDTIENLKY
AAH19850.1	61	IQKES	TLHLVLRRLRGGMQIFVKTLTGKT	ITLEVEPSDTIENVKAKIQDKEGIPPDQORLI	
NP_001284937.1	61	IQKES	TLHLVLRRLRGGMQIFVKTLTGKT	ITLEVEPSDTIENVKAKIQDKEGIPPDQORLI	
PIK45544.1	61	IQKES	TLHLVLRRLRGGMQIFVKTLTGKT	ITLEVEPSDTIENVKSKIQDKEGIPPDQORLI	
TRINITY_DN52789	121	YKIQDKKGIPQDQNR	LI	FDGKQLEDGRTLSDYNIQY	DSL
AAH19850.1	121	FAGKQLEDGRTLSDYNIQKES	TLHLVLRRLRGGMQIFVKTLTGKT	ITLEVEPSDTIENVKA	
NP_001284937.1	121	FAGKQLEDGRTLSDYNIQKES	TLHLVLRRLRGGMQIFVKTLTGKT	ITLEVEPSDTIENVKA	
PIK45544.1	121	FAGKQLEDGRTLSDYNIQKES	TLHLVLRRLRGGMQIFVKTLTGKT	ITLEVEPSDTIENVKS	
TRINITY_DN52789					
AAH19850.1	181	KIQDKEGIPPDQORLI	FAGKQLEDGRTLSDYNIQKES	TLHLVLRRLRGGMQIFVKTLTGKT	
NP_001284937.1	181	KIQDKEGIPPDQORLI	FAGKQLEDGRTLSDYNIQKES	TLHLVLRRLRGGMQIFVKTLTGKT	
PIK45544.1	181	KIQDKEGIP	QTSSVSSSLVN		
TRINITY_DN52789					
AAH19850.1	241	ITLEVEPSDTIENVKAKIQDKEGIPPDQORLI	FAGKQLEDGRTLSDYNIQKES	TLHLVLR	
NP_001284937.1	241	ITLEVEPSDTIENVKAKIQDKEGIPPDQORLI	FAGKQLEDGRTLSDYNIQKES	TLHLVLR	
PIK45544.1					
TRINITY_DN52789					
AAH19850.1	301	LRGGY			
NP_001284937.1	301	LRGGMQIFVKTLTGKT	ITLEVEPSDTIENVKAKIQDKEGIPPDQORLIFAGKQLEDGRTL		
PIK45544.1					
TRINITY_DN52789					
AAH19850.1					
NP_001284937.1	361	SDYNIQKES	TLHLVLRRLRGGMQIFVKTLTGKT	ITLEVEPSDTIENVKAKIQDKEGIPPDQ	
PIK45544.1					
TRINITY_DN52789					
AAH19850.1					
NP_001284937.1	421	QRLIFAGKQLEDGRTLSDYNIQKES	TLHLVLRRLRGGMQIFVKTLTGKT	ITLEVEPSDTIE	
PIK45544.1					
TRINITY_DN52789					
AAH19850.1					
NP_001284937.1	481	NVKAKIQDKEGIPPDQORLI	FAGKQLEDGRTLSDYNIQKES	TLHLVLRRLRGGA	
PIK45544.1					

Figure S1: (A-D) Alignment of each of the four ubiquitin *H. glaberrima* transcripts with their respective closest matches from the NCBI non-redundant database.