

**SUPPLEMENTARY INFORMATION (9 pages including this)**

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From

**Enteric bacteria boost defences against oxidative stress in  
*Entamoeba histolytica***

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Included material

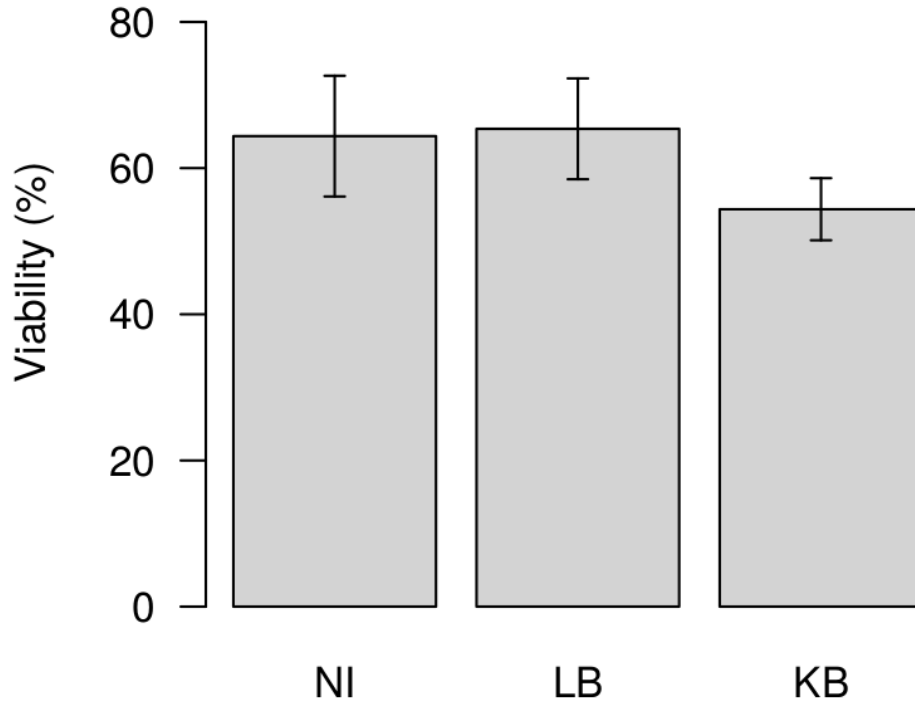
Figure S1: Effect of *Escherichia coli* O55 on the resistance of *E. histolytica* to nitrosative stress.

Figure S2: Effect of diverse bacteria on the resistance of *E. histolytica* to oxidative stress.

Figure S3: GO Terms enrichment in *E. histolytica* under stress upon incubation with diverse bacteria.

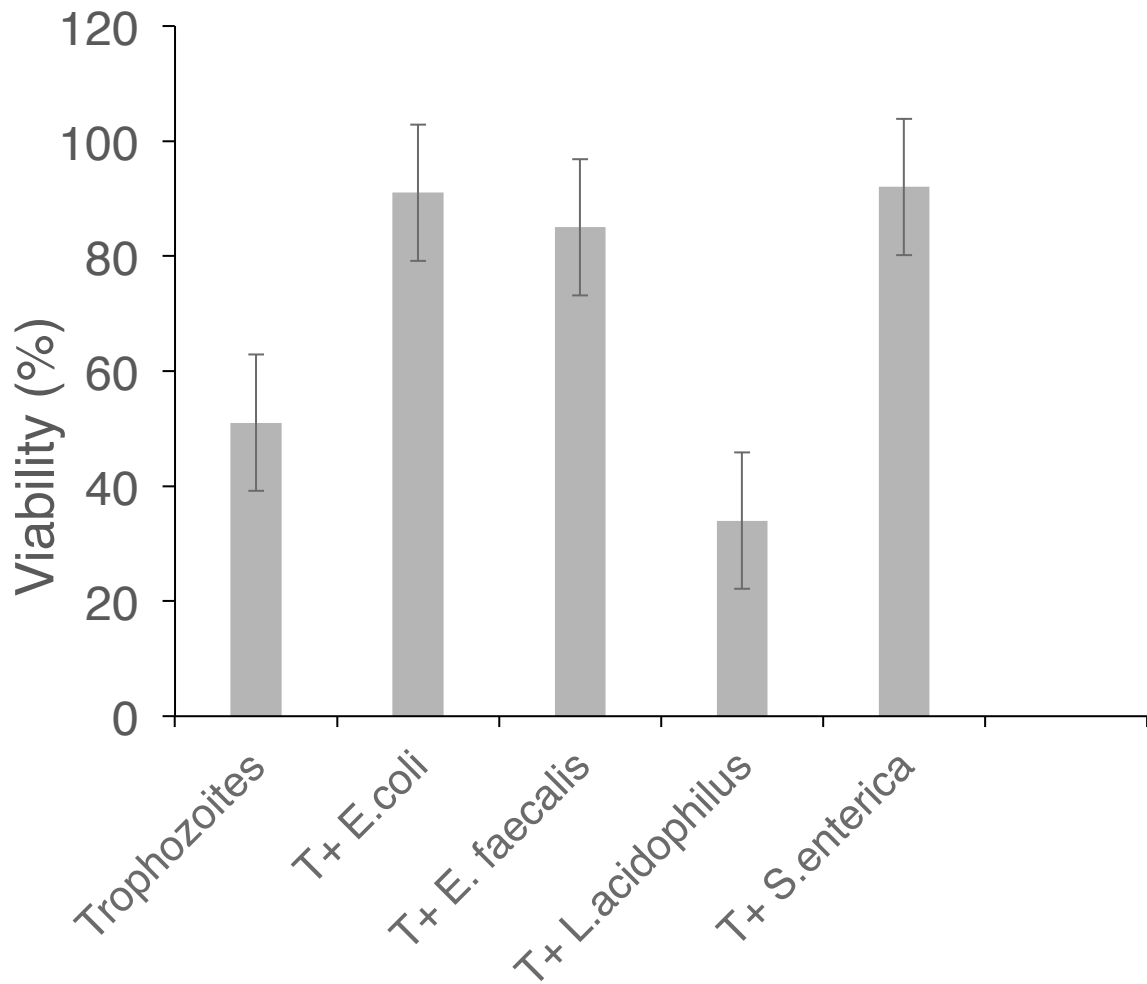
Document DOC1: LRR motifs in the amoebic proteins identified in this work (see Table S8).

**Figure S1.**  
Effect of *Escherichia coli* O55 on the resistance of *E. histolytica* to NS.



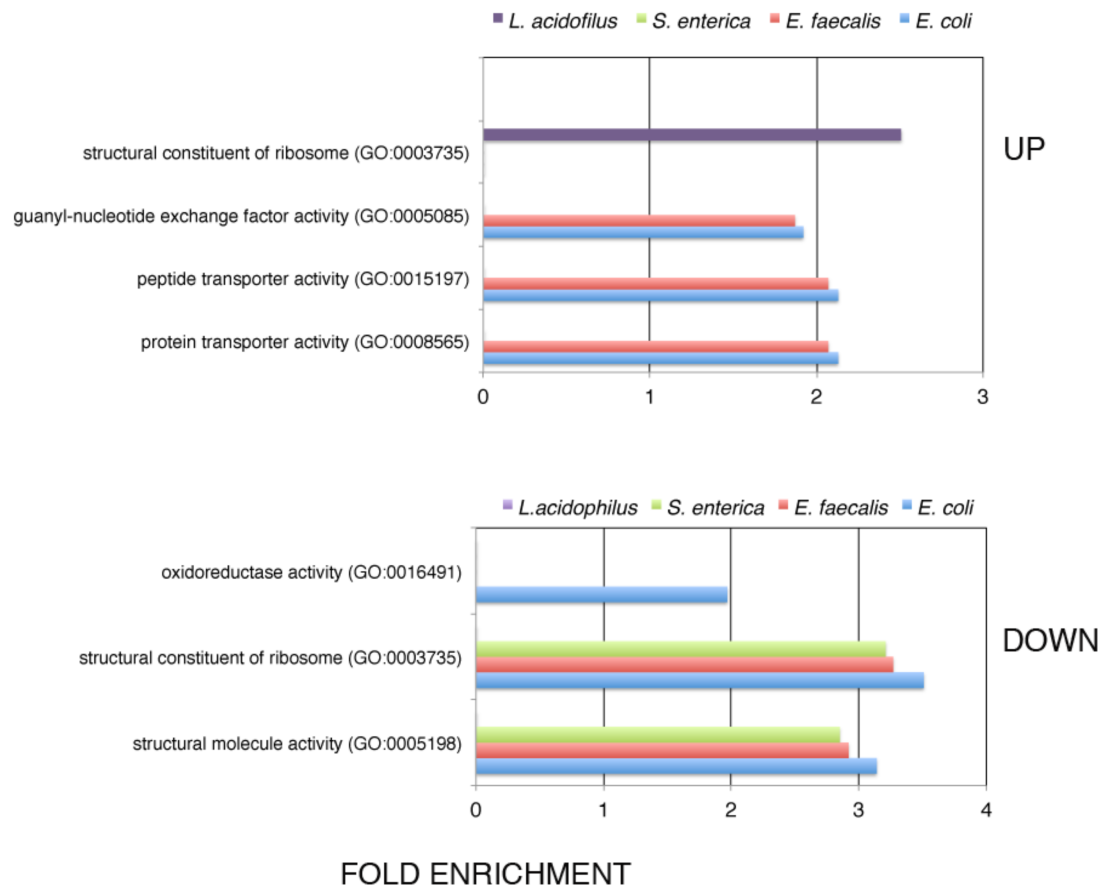
Trophozoites ( $1 \times 10^6$ ) were treated with (i) GSNO ( $350 \mu\text{M}$ ) for 1 hour at  $37^\circ\text{C}$  (NI); (ii)  $1 \times 10^9$  live *E. coli* O55 (LB) for 30 minutes and then with GSNO ( $350 \mu\text{M}$ ) for 1 hour; and (iii) heat-killed *E. coli* O55 (KB, the equivalent of  $1 \times 10^9$  bacteria) for 30 minutes and then with GSNO ( $350 \mu\text{M}$ ) for 1 hour. The trophozoites' viability was determined in an eosin dye exclusion assay.

**Figure S2. Effect of diverse bacteria on the resistance of *E. histolytica* to oxidative stress**



Trophozoites ( $1 \times 10^6$ ) in the presence of the diverse live bacteria ( $1 \times 10^9$ ) were treated with 2.5 mM  $H_2O_2$  for 1 hour at 37°C. The trophozoites' viability was determined in an eosin dye exclusion assay.

**Figure S3. GO Terms enrichment in *E. histolytica* under stress upon incubation with diverse bacteria.**



The data from [Supplementary Table 6](#) were analysed with PANTHER tools (<http://pantherdb.org/>), in order to determine the fold enrichment (FE) of gene sets with GO terms, relative to the background list for all genes in the amoeba genome. The GO terms were used to identify enriched molecular processes; those with an FE  $\geq 2.5$  were plotted.

**Supplementary DOC 1. LRR motifs in the amoebic proteins identified in this work (see Table S8).**

The diverse LRR motifs were localized by visual inspection of amino acid sequences. We took into account the consensus sequences for LRR

Bsp A: **LxxIxLxxxVxxIgxxAFxxCxx**

LRR11: LxxLxLxxNxL

LRR12: LxxLxLxxCxxL

**EHI\_120570, 356 aa**

MQLGYNEIMIVSKYFDDINDFINLEIGVKRFQGNMERFHFNPIPLNQYSRKLFPNIE TF  
HIYNIYDEVFEDGRIFKYVIWYKVDYSRYLEEKEEMNEYKNIEYTQEDRKKYGN TIPNE  
VTSLGYWCFSLCDDIQEIEIPTS SVTEIRSYCFERCSS

**LQTIITIP TNVSKIGDS CFYKCSS**

**LQTIITIP TNVSKIREC CFYGCSS**

**LTTINIP PSVTKIGNRC FEFCYS**

LTSINIED-VKYISEKRIFMNEPV

**LISIKILEN LTIINGKNIEK KDINEFIIPSSITKLGDYCFEYCYS**

**LQTIINIP TSVSKIGDY CFKECTS**

**LTSINIP SSITSFGKG CFYHCRCEEELKKNKTIPEYCFEE**

**EHI\_139980, 666 aa**

MQRDNPNNMKRIRRKMSLNIPTRPFLLTENTGSIIPTLSEIILDSFGRFEQNFSSQQE  
QTPIALPPVLASKLIYRISNNPNASESDLNIIILFRI LSSGTP LQVIDLHHTHLLTKFTC  
MNLSQLCNVSIITL NISYATGISSLSKVLFRSFKQLKYL NTEACVGFDDNAFISLLT  
IHPPLEVIVISNCPKISDKSVIELKNINSLISFKANNIQLTISSISVLHGLKEIELMGN  
NCLDDQCLLKISQLNPDLTRICFGNSRLSDEALQRLLOQLNGNLISLNL SGCTRAGPMT  
LAQLFNSQFKLKYLNLANCFGINGDSILESYPHMPFRSTLFRWLEEIEYLNISGCIRLSE  
EFITTTLIASPOLRSLILDDTAVTDQCLQEFIQSSITYNOTVRRSIHTPGMKVHPLTSL  
LKRCIRLTDNAYTNLFQTRGVDLISLNL SFCNSLSSLSLNVFSLYSNTLTSFYASNNDM  
ISEYSWLKFIASCPLRVLFLSNNRGITNEVINQIKISCP LISHLDISSCLSINQFVIP  
IILCKMQSLEYIDISFDVMINEDGIISLVNSLTRLSTFCMQGIAFKQSYLFTEEAQWLNS  
LKLNFIPMCGDDVMRNIA SYCPLLTSVELRMC SGVTDNGIEMLLQKCTKISHLVLGGS  
ISQFKMMELVGRGLFIA

**EHI\_087890, 484 aa**

MSSDKQHYNKKNMGIKQFPKDCISQASIIITSIDLSNNEIINLPKEMGPFKVLTHFRMMA  
NKVSSLPLSFTTLTNLRHLDLNANCFTEFPQTITSLTNLEEIQMIQNQLTSIPDCIGNL  
VKLQRI SFTANFLKSLPKGLAKCVD MNYIELTSNEFEFFPDVICELRKVTILMLQONRI  
KEVPDSISKLEKLSGLYLSSNNGFKFPESVCTIPS LTOLELDNNNFVDIPDLSLQTLK  
KTLIINKSFISCLNSVDMMSNLCQIVLSDTKCMFLPDLSONSKLTSLNVIRGYLNEVKS  
LPPNCSCRFSNNQIESIELPENGV LQYMILSNNRLKVSPNLSMLSKISRDISQNRITR  
FNENTCHPTLQQLDISCNPLVEFPVCITKCQSLKILNLS DCHLYDIPSNVLSLNSLET  
LYIGCNHLSLESLSVLKKLRALYLOSNNLHFPQSIFDLITLKT L FVSNNYIT TIPNE  
ISQLTQLEQLAP

**EHI\_154170, 253 aa**

MKIGYNEIMIISKYFDDINDFINLEMRVKRFQGNMERFHFNPIP  
LNQYSRKLFPNIETFLIYNEKDEIFEDGRINNYVIWHKVYRVIYKGTIPPEVTSLGVE  
CFSNYKDLITFRIPTIINKLGVSCFHGCNEERIFVNETILISIEIPRNPEIINRKNIEK  
KNINAPIIPTTISKLGDYRFEDCTT  
LRLIIIPTSVSELGEYCFINCTS  
LTSIDIPPTVSEIGNGCFDGCFRKKNEKEQNVKENI  
LSKILYK

**EHI\_137910, 1065 aa**

MFIIIFYFFIYNCFGKCELNFTSASRYGLNGLIVISSNTRECSGDIKIPNSGIDPISNEE  
KRVEVIGWNAFSNS  
LIKSIEIPTSIIKIIICLNAFSNCNN  
LQININIPKSVYRIDYQAFSNCKS  
LVSINFNNAEIKELGNELFIGCNK  
LKSIDLSTFSIETIYEDTFNGCSN  
LINVILPYTLREIKESAFSGCTS  
LTTINLHNTLINSIKEKAFKCTS  
LITITFPSTLTSLSNNSFEKCTSLTTSIIFQSVLSSSNNNIPFNECNKLKSIYYTGTDLF  
TNCIFSNPIQNIYVNSEYQQDFICSIKVIKNINHSPIIYLCKYSDSNECVSYLSYRKS  
SINQLTNNEICYQRGSTNQKIIINDNKYYLVDCNNNTKIQYYQNKIINNIIISNFIFS  
VGYKEINDNNIHLREYFISKRIDNIQWITNQCTVTKHLYLNENENSSIKTKDIIIEIYR  
NGYIILNNGIFYIEKNIKMNEIQTLYFGNEQMYREV LINDYFESMNQENYIFECISKDL  
CKTYKFNTTNNLFIEDIDFP LLKKEIKTNI LAIGYEFHFYYSYFYSQOVKFTNYCENG  
KIFRTIGMELQLMSNFVNECPKDDYSSFSIEIESKNETIEINSRIYKISVLDNRISD  
STPIYLFKFTNSYL RVIPNKCFQITNSSSLLFIPGIYGDKNYIFLKEYNSTNNCNGIYGI  
SEFSPDQYSYTKFNINDDYSIIISYFDNDYKDCGINKIEEASLIRYVLPDINKCQFKSTY  
TINEFNLIETKYDNSDCKGNII IQESYALKRCINDTNQLHIIATFPKIKSEDCNNKFKG  
CINCDLDECYECPSGYGLSMKKDKCIDCSI FTNDCIQCNNQTCTKCNSIDNEIRVYHNN  
NCLTCKEAFNDNGCLECNVNCTLCSSINGTL RYNNNGSCKTCEEAYDENCSDCDGIEC  
KKCKIEYGLKIGRHGCMKCFDLDSKCLECGEGICTKCYNNLLFKNNKCQSCDDIYGKDC  
LSCDINNCLTCDNNKVVIESKICISCNKLF DHCVHCNTTHCLDCDSIAYSLSNGKINQN  
NEQGNNSCLISILLVFSIILFFLI

**EHI\_017710, 426 aa**

MSDHQIEKKP  
LTNLT LRQYVFKATEPIAVEVPEELTNLEEMEFFSCVN  
LDKLI LSPHMLTIPSGLCWGCVMLTEVILPCLRSIEDNAFKSCIR  
LKTISLPPTI THLGSNSFNDCES  
LQKITLSSIKISTR-AFCGCF  
LKEVELPECIESIDESAFALCRS  
LDKISIPNNVSSIGKMAFNECSS  
LTAISLPQNLQLFVDSALMRCNKLQRIILHGKNEINFKVSYHVSQLEENGITCNNIEL  
INGDDLIFSCNEIPSSISSIGDSYYKECEFKTTSFIIPSTITSLGESAFCLCGN

LKKI VISSS I TNLPDYCFAYCTD  
LIEIKIPTS I TSIGTRCFHNCIS  
LKEIYVPDSV I HIGESCFSNCTK  
LTSIKIPTTCIEKENLSQVFLGSKKLSSINGNSFDYTDECLCDEFIEEDDNDEIHAQGW

**EHI\_123820 500 aa**

MQLGYNEIMIVSKYFEDINDFINLEIGIKRFRGNMERFHFNPIPLNEYSRKLPNIETF  
HIYNGYDKIFEDGKIFKYVIWYDVSYSRYLEEKKEKNEYKNIEYTIYDREEYGNTIPIE  
VNSLGINCFYRCNDIQSINIPTS SVSKIGNECFYQCTS

LTSINIPTS I SEIGDKCFGCYS  
LRTIDIPIS I SKIGYCCFSGCSS  
LQTINIPTN VSKIEYWCFKYCTS  
LKSINIPTS I SEIGNGCFEECSS  
LTSINI E DVKYISEERIFMNEPV  
LISIEIPK N LK M I N G K H I E K K D I N E F I I P S S I T E I G D Y C F K E C L S  
LKSIDIPIS I SKIGYWCFCECSS  
LTSINIPTN VSKIGDYCFYGCYS  
LRTIDIPN VSKIGYCCFSRCSS  
LKSIDIPTS VTEIGYWCFCECSS  
LRTINIPTS VSEIGNYCFYGCSS  
LTSINIPTN VSKIGGGCFYKCTS  
LISINI P S S I T S F R N G C F Y G C G E E E L K K N K S I P E Y C F E E Y F Y E E I R

**EHI\_128460, 237 aa**

MQLGCNEIKIVSKYFKDINDFINLEMGVKRFRGNMERFHFNPIPLNQYSRKLPNIETF  
HIYNKEDEIFKDGKIFKYVIWYKVNYSKYLKEKEEGNICKNIEYTKEDREEYGNTIPIE  
VNSLGNRCFRWCGDIQSINIPTN VNELGNGCFYECSS

LTSINL P P S V S K I G D E C F Y R C S S  
LTSIKIPTS V G K I G E Y C F Y D C S S  
LKSIEI P P R V N K I R E G C F C N C T S L T S V T M T S S V T S F

**EHI\_176480, 241 aa**

MQLGYNEIMIVSKYFEDINDFINLEMGVKRFEGNMERFHFNPIPLNQYSIEFFPNIETF  
HIYNEEDEVFEGGRIFKYVIWYKVSYSRYLEEKEKGNVCKNIEYTEEDRNTYGNTP I E  
VNSLGDLCFYGCKS

LQSINIPTS VSKIGNRCFKY CST  
LTSINIPTS I SKIEDYCFEYCKS  
LTSIKIPTS V G K I G N K C F S F C T S  
LTSINI Q S S I T S F G K G C F Y R C G C E E E L K K N K Q I P K Y C F E K

**EHI\_134140, 439 aa**

MALGYNEIMIVSKYFEDINDFINLEMGVKRFGRNMERFHFNPIPLNQYSIEFFPNIETF  
HIYNEYDEIFEDGRIFKYVIWYDVSYSRYLKEKEEMNEYKNIAYTEEDRIKYGNTIPIE  
VNSLGINCFGQCDIQSINIPTNVSEIGDECIFYRCTS

LTTINISTSVSEIGNKCFYGCLS  
LTTINIPTSVIEIGNKCFYCKIQSITIPTSVNEIGNECFKYCKS  
LTSIEIPTS SVSKIGDGC FEYCTS  
LTTINIPTSVNEIGNECFKYCKS  
LTSIEIPTS VIEIGNECFKYCKS  
LTSIEIPTS SVSKIGNECF SFCSS  
LTSIEIPTS SVSKIGNKVFYGCDDIQSINIPTSVIEIGNECFKYCKSLTSIEIPTS SVSKI  
GDGCFEYCTSLTSITIPTSVNEIGNE  
CFKYCKSLTSIEIPTS VIEIGNECFKYCKSLTSIEIPTS

**Only with *Salmonella enterica***

**EHI\_119470, 574 aa**

MKHTLNIDS IQQVALYFETIDDYKNIILSSKKFQHLLEYFKSNPIPLNDET IKFFPNIN  
TYNLFSLQDTFYESLSSLKICFYCRISYQ RSLKEIKKGNTCKFIYYSKEDKKKFGDILP  
SQVKKIGKECYCNPS

LSIFEVPYSIVEIGDKSFMNCTS  
LTSIVLSSSITRLCNYTFHKCIS  
LKKIKLPQSLKHIGYNCFSGCSS  
LNSIQLP EMLLSIGDYCFDFCVN  
LTS LAIPSSITYFGIQCFNCSS LKSLSIPS NLTSFNROQFYGCSSLEEINVPAPYWIV  
GKHLFFNKMKLVGCLPSTINSINKIPVAFDMNQTSFEVPTEVK SFGNKCFQDEHS  
LRSISIKKFIDRLDNYCFEGCLLVTSISLPSTIKVIENGCFGCIS  
LKEINIPSSLTRLGDYCFYRCSSLSAVSLPSSLKVIPYQCFSGCSS  
LTSIDLPOGV LKLSDQSFKDCAT  
LQSINIPSTITKIEVGCFNCLRLSEVSFYSPIQIPDFCFNSC  
LQTITLPLSVISIGNRSFCMVK  
LQSIQIPSLT TSLGNDCF TNCSSLVSLGSLPKNAILGDDCFFGCEKLFY

**EHI\_127100, 482 aa**

MSSEESITLSSCSSTSTAYSEIQIQLAIAETDTFGFFSFEVDPLFLVAQYLQTESDFINF  
IQISKRFQVVLSYFQSNPISV  
NSLRLFPQIKTQYLFNKNDKRIKGVSKYVYRCLLTHTEAKKLNRSNV SFKRVVFKKDKN  
AKKHHIPKLTDLADCCFTKSVY

LKSILIPSTV TLLGSDCF LDCSS  
LSKLVLCSSLIHLGISSFENCKS  
LRHVVLPLLIKEIPDNCFKECTQ  
LKDVVLPSCITRIGHSSFENCLS  
LTEIINTSNI IELGQEA FKGCHS



LKQLHFSSSLNYIGVSCFDDCDL  
VKINPPPLSSLK CITNKQSLDNKTPSSNHIVLTSDDCIEIMEEIPLTINVIGRSAFKYI  
MPSQLILPNSITRIESNAFYQCTL  
LTSIIFSTSLKVIESRAFMGCSH  
LKSISLPASIQFIGDEAFNNCYE  
LTSIVVEGFPCIG-YHAFSHCNE LQNI IIPPF SNQNTNDIFFGIKIPSK  
PCCIV

**EHI\_112290, 213 aa**

MENTTKRNDKERMRLGYNEIMIVSKYFEYINDFINLEEREKKETNECKNIEYTQEDRNT  
YGTPIPIEVNSLGDICFRWCDDIQSINIPTNVSKIGDKYFEYCTSLRI INIPTNVSKIG  
DKYFERCSSLTSNSYKNIQFVGEDRIIVNEQIMASIPIGRLKI INEKEIKPKNINEFVI  
PTTVTKLGNFCYFENCYS  
LTSIKIPTS VSEIGKECFL

**EHI\_041470, 448 aa**

MQLGYNEIMIVSKYFEDVNDFINLEMGIKRFQGNMERFHFNPIPLNQYSKLFPNIETFH  
IYNKYDEIFKDGKIIKYVIWYKVEYSRYLKEKEEMNECKNIEYTEEDRKKYGNTPIEV  
NSLGINCFYGCNDIQSINIPINVSKIGECFLCSS  
LKSINIPTS VSKIGDSCFSGCLS  
LTSITVPPSVTKIGYGCDFGCSST SINIPTS VSEIGYGCDFGCSLTSINIEDIKYISE  
ERIFMNEPVLISIEIPKNLKMINGKNIEKKDINKFIIPSTITKLGYEFCFEGCSSLI  
LINI--PTSVE-IGNECFYGCES  
LKSIEIQTNVTKIGNECFEYCKS  
LTSINIPTS VIEIGNC-FRECTS  
LTSIEIPTS VNEIRNTCFGWCESLILINIPTSISEIGEYCFYECSS  
LTSINIPTSFTSFEICCFYHCGCEEKLLKKNKKIPKYCFKKY

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