



| QUER | V YQ G K |
| :---: | :---: |
| UniRef90_C3ZBC0 | V Y D G |
| UniRef90-W5M9P6 | $\checkmark \mathrm{Y}$ K G |
| UniRef90-W5Q9L2 | TY A G K |
| UniRef90-Q7ZX29 | VY S G K |
| UniRef90-E9BYS3 | TY |
| UniRef90_UPI00046C373D | V Y K |
| UniRef90-A0A026WBP4 | $\checkmark$ Y K G |
| UniRef90-T1FNC4 | $\checkmark \mathrm{Y}$ K G |
| UniRef90-A0A034WPL9 | Q Y Q G Q |
| UniRef90-A8QDR1 | VYE GN |
| UniRef90-T1J8N4 |  |
| UniRef90-I1G4Z3 | S $A$ |
| UniRef90-UPI00042AAFF8 | F Y |
| UniRef90-P39867 | E Y Q G |
| UniRef90-H2ZN53 | E |
| UniRef90-D0EP49 | E Y L E K |
| UniRef90-J3JYK7 | Q |
| UniRef90-P49102 | E Y V ${ }^{\text {R }}$ |
| UniRef90-I1MAM5 | E Y T |
| UniRef90-I1P4P3 | $Y$ A |
| UniRef90-P92922 | E Y |
| UniRef90-P17570 | E Y Q |
| UniRef90-DONRY2 | S Y M G |
| UniRef90-C1FJ74 | E Y |
| UniRef90-Q54NC1 | NYQP |
| UniRef90-M4ASK9 | Y K G |
| UniRef90-E9BBH0 | $\square \mathrm{Y}$ L G N |
| UniRef90_L8WY93 | NY |
| UniRef90-UPI000392D872 | V Y K G |
| UniRef90-U6IOL4 | HYCG |
| UniRef90-D5GAB4 | VY A P |
| UniRef90-K0SI16 | DYHKN |
| UniRef90-UPI0004411499 | NY |
| UniRef90-K5W184 | $\square$ WQ G |
| UniRef90-UPI000455FA75 | K Y |
| UniRef90-G1X4J3 | K Y |
| UniRef90-D3BR16 | N |
| UniRef90-D8LQI2 | V |
| UniRef90-M5G213 | K Y HA |
| niRef90-M7ZJJ3 |  |
| UniRef90-U4L0R2 | VY |
| UniRef90_COSBW9 | $\checkmark \mathrm{Y}$ T |
| UniRef90-Q0UEY4 | $\checkmark \mathrm{Y}$ T |
| UniRef90-U1I2Z0 | E Y $\square$ G |
| UniRef90-G3B2Q6 | T Y |
| UniRef90-UPI00042B2BC8 | K Y |
| UniRef90-F7W9R6 | QY A |
| UniRef90-F0XGY8 | VY |
| UniRef90-L8FY26 | K |
| UniRef90-W2S5X9 | E Y L |
| UniRef90-W6MIM1 | T |
| UniRef90-P36842 | E Y L G K |
| UniRef90-ROIKA3 | K |
| UniRef90-E4WX87 | $\square \mathrm{Y}$ Q |
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| UniRef90_G9NLX1 | VY T P N |
| UniRef90_A9T4X8 | K |
| UniRef90-G3FFU0 | E Y |
| UniRef90-M7P9N9 | RY |
| UniRef90-S3C5M6 | VY T |
| UniRef90-M1WC47 | E Y L |
| UniRef90_G2YAP4 | R |
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| UniRef90-E4ZWJ7 | V |
| UniRef90-I2FUE6 | PYKAN |
| UniRef90-UPI0003C2A24B | PYR P N |
| UniRef90-V9D2E0 | VY |
| UniRef90_Q6CID0 | HYQPN |
| UniRef90-B6JV34 | S Y K |
| UniRef90-G9MWG0 | R Y |
| UniRef90_G9MK57 | T Y $\square \mathrm{G}$ |
| UniRef90_G8ZZN5 | Q Y M N |
| UniRef90-A0A059CNH0 | K Y T |
| UniRef90-UPI0002234706 | F Y K P N |
| UniRef90_UPI000273BB91 | PYK P N |
| UniRef90-L8GGN4 | VY T |
| UniRef90_Q0CFD9 | RYHGN |
| UniRef90-A0A017SFJ5 | R Y Q G |
| UniRef90-W0T804 | E WK P N |
| UniRef90-B0DST0 | T WK G Q |
| UniRef90_UPI00022B5DEA | F Y K P |
| UniRef90-K3WYP0 | A Y K |
| UniRef90-H1V8X1 | EY $\square$ G N |
| UniRef90-A0A016Q8K0 | VYHGN |
| UniRef90-A2QPC0 | $\checkmark \mathrm{Y}$ E G |
| UniRef90-W6QG15 | R Y |
| UniRef90-E4X716 | E F H |
| UniRef90-B7GCP2 |  |
| UniRef90_A7TNL7 | E Y T D R |
| UniRef90_C5M929 | K WEPN |
| UniRef90_F2PM84 | R Y H G N |



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| :---: | :---: |
| $\begin{aligned} & \text { UniRef90_F0X7X0 } \\ & \text { UniRef90- S6EBB9 } \end{aligned}$ | D |
| UniRef90-U4LIP8 | PLGLPVGQHMRTKNPVS |
| UniRef90-K9F | ALGLSIGQHLMIK ${ }^{\text {SPSNNEAIIRSYTPISDTTLLGKMELL }}$ |
|  | VSGLPVASALLTKYKGPEDETLRPYTPTSDESEKGFLDLV |
| UniRef90-K8EMU6 | AFGLPTGSHVMVQDAKTGEKHMRPYTPVSSDADKGHVDFV |
| UniRet90-A6ZVM6 | VLGLPIGQHIVIKANNGKDITRSYTPTSLDDTKGNFELL |
| UniRef90-G7YCD3 | RPG\|PVGKHVYFVAR1 EGQTVVRPYTPVSLDTQKGYMDFV |
| iRef90_W2TN34 | GLPVGGMVYLLTAKIDGKLVVRPYTPVSSDDDLGY |
| Ret9 | MKVASFVMA |
|  |  |
| UniRef90-G2R | Al LTKFQPADAEVIRPYTP |
| UniRef90 IOYYVo | LLGLPAGQCI KVKATTKGAELVQAFNP |
| UniRef90- 33 BNL5 | VSGMEAASALLTKFKPEGKPVIRPYTAVSDDDATGHIDLL |
| UniRet90-C5BG988 | VSGLHHASALLTKYSPPDKPVIRPYTPTSDEDQPGYLELV |
| UniRef90-F4X128 | QFVTLDLDDDGKAVKRSY |
| UniR | $V L G L P V G Q H L T V V V E V D G K Q H S R S Y$ |
| UniRef9 | KLGLDVSSCILTRAPVGQDAETRPYTPISDPEAKGYFDLL |
| UniRef90-B2AZ63 | TLGLPVGQHLLVRLSSP ETM RAYTPISPGSLPTGTLSLL |
|  | KLG ${ }^{\text {a }}$, |
| UniRet90 W9WZE8 | GLVASAIVTKFKPADQEVTRPYTPTN |
| UniRef90 ${ }^{-} \mathbf{V} 2 \times$ | VASCLVVKSSDPEGP |
| UniRef90-S7R | CVYLPKDAKGNPVARPYTPISPPDLPGEFVFL |
| B1 |  |
| iRef90' F7VUA | GLTSALLT\SFPKGRWVLRPYTPTNDLNEPGYVELM |
| UniRef90-L8G3L88 | Alt TKYKGPEMEVIRPYTPVSDEDERGHFTLL |
| UniRef90 | - |
|  |  |
|  |  |
| M7Z |  |
|  | ESGLPPVASAVITKYPEMQKPVIRPYTPISDVDQKGTVDFI |
| UniRef90-H2IN46 | VGGMPAGKHIECATVNDKCMRA |
| UniRef90_A1Y9J5 | SPALSFLLARPHGTWSLRMRPYTPV |
| UniRef90-S7QGC9 | $V Y L S A R \Pi D G S L V I R P Y T P V T S D E D Q G Y V D L V$ |
| UniRef90-H0ZQJ4 | LRVPTGQHVYLKHTIAGTEVVKPYTPVLPFLPLDFQEPP |
|  | HLQVPDGQHVYLKLP TGTE |
| UniRef90 Q04516 | RLHPPMGYHLAVRVTINGERLVRYYTP |
| UniRef90-C1G7W4 |  |
|  | FDAELGGDAESRCYSVSSSPCRKNA |
| UniRef90- U1G099 | GQHVALAGTVDDHTVVRSYTPISNNRDLGR |
| UniRef90-E7LWQ3 | $\checkmark \mathrm{R}$ |
|  | , |
|  | G |
|  |  |
| UniRef90 UP1000366B935 | GQF V |
| UniRef90-J3HAU8 | TSFEP G |
| UniRef90 A1S327 | R |
| UniRef90 UPIO004780EEC | LDFDPGQYLT |
|  |  |
| UniRef90-W4C | LGLTLPGQHVKVRVATRGTFYERAYTP |
| UniRef90 M5FX13 | TLLPKAADDETGPKDDKGRPVVRPYTP |
|  |  |
| UniRef90-TOQES9 | A |
| UniRef90_M5C2H7 | WVRPP |
|  | $\checkmark$ VGLHIACTYIRRETKPRDMYIRPYTPVSDEDEP |
| UniRef90-UP10003ED | P |
| UniRef90-UP10003 | $\frac{R F}{V F}$ |
| UniRef90-E1ZSU66 | VLGLPDGQH |
|  |  |
| UniRef90 UPIO004652859 |  |
|  | YVLVHLRINGAAVTRS |
| UniReef90 UPIIOOO36B4BB0 | WSGHLAGQHLMLRRAEDGYVAQRHYSUASHPDD |
|  | , |
|  |  |
| UniRef90 14 B 3 H 4 | F |
|  | TFRHKPGQHLNVRYTVDGKEVRRSYSVCAPATEQ |
|  | LS GLPLTSSVLTFSWPAGRPVARPYTPITPATTPGH |
| D3U | RVDGAEL |
| UniRet90-UPIOOO3743727 | EIAGKE |
| UniRet90-S7VTM8 | QHLTLKADINGEDV |
| UniRef90 L7KL83 | QFLSUGVE: DGRTVERCYS:SSSPTRP |
| UniRef90 A3YFC7 | Q |
| UniRef90-J2h | GQHIALRRLVDGQEIRRT |
| UniRef90_N4VOU1 | VSGLSLLS SVLTMAWPEGRWVARPYTPIUPLDD P G YLELL |
| Re990-KZLNT4 |  |
| UniRef90 D7D | VFKFLPGQFITLELTVGEINRSYTISSSPNRPHVIS |
| UniRef90 UPI000273B67E | F LVPMGHHVYLKQTVTGTEVVKYTPVLETLISSNLKESL |
| UniRef90-G8 | GVQPMD |
|  |  |
|  | YKPGQYILVSLTVEGKVVTKAFSLSSSPTEKGHIEFT |
| UniRef90_N6L | VLGLPITGQHIHISARINEQMIIRSYTPVSSDDDRRILCGSG |
| UniRef90-J1F |  |



| UniRef90_F0X7X0 |  |
| :---: | :---: |
| UniRef90-S6EBB9 | HYSAN |
| UniRef90-U4LIP8 | VY G G |
| UniRef90-K9FYS2 | , |
| UniRef90-C7YI64 | Q WEEN |
| UniRef90-K8EMU6 | R Y V G E |
| UniRef90-A6ZVM6 | H |
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| UniRef90-W2TN34 | V |
| UniRef90-T0RK17 | P |
| UniRef90-P43100 | E Y L G K |
| UniRef90-G2R3A3 | PWSPN |
| UniRef90-IOYYV0 | K Y |
| UniRef90_UPI0003D0DB00 | LY EP K |
| UniRef90-S3BNL5 | K W |
| UniRef90-Q5BG98 | P WEA |
| UniRef90-F4XI28 |  |
| UniRef90-S9R079 | K H |
| UniRef90_S8CGD3 | R |
| UniRef90-B2AZ63 | L |
| UniRef90-C4R8S5 | K WQP |
| UniRef90-S7PX21 | M Y L G K |
| UniRef90-W9WZE8 | P WAPN |
| UniRef90-V2XQY6 | P W |
| UniRef90-S7RYJ2 | P |
| UniRef90-B1WNU6 |  |
| UniRef90-F7VUA7 | K WT P |
| UniRef90-L8G3L8 | P WT A N |
| UniRef90-G9MKF0 |  |
| UniRef90-UPI000344B82D |  |
| UniRef90-G8Y7X4 | K WE P |
| UniRef90-M7ZHJ4 | R Y S P N |
| UniRef90-M2UFW6 | Q WS |
| UniRef90-H2IN46 |  |
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| UniRef90-Q04516 | E Y |
| UniRef90-C1G7W4 | R Y E G N |
| UniRef90-13X5N5 |  |
| UniRef90-M5ES84 | L Y |
| UniRef90-U1G0Q9 |  |
| UniRef90_E7LWQ3 | K W |
| UniRef90-W5UKK7 |  |
| UniRef90-H0ZZU3 |  |
| UniRef90-B7PQD9 | N Y K P N |
| UniRef90-UPI000366B935 |  |
| UniRef90_J3HAU8 | T P $\square \mathrm{G}$ R |
| UniRef90-A1S3Z7 |  |
| UniRef90-FOXOK4 | LY |
| UniRef90-UPI0004780EEC |  |
| UniRef90-G7EAM7 | A Y K A N |
| UniRef90-W4GCM4 | G Y S G |
| UniRef90-M5FX13 | A |
| UniRef90-N1PRP7 | P W |
| UniRef90-T0QES9 | G Y |
| UniRef90-M5C2H7 | P WK N |
| UniRef90-W9XYK1 | D Y K P N |
| UniRef90-D4APJ2 | E WEAN |
| UniRef90-UPI0003EDA846 | T F |
| UniRef90-UPI00035CA3BD | H $\square$ K E N |
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| UniRef90-A2WL86 | R Y |
| UniRef90-Q2GZU8 | A WT |
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| UniRef90-V7FDV8 |  |
| UniRef90-UPI00036B4BB0 | A W |
| UniRef90-C5FPM4 | S WT P N |
| UniRef90-X8JF05 | D F K |
| UniRef90-14B3H4 |  |
| UniRef90_UPI00036294C2 | V L E P R |
| UniRef90-T5AN77 | R W T P |
| UniRef90-K2RNV8 | R WT P N |
| UniRef90-D3UY96 |  |
| UniRef90-UPI0003743727 | T |
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| UniRef90-L7KL83 | S Y |
| UniRef90-A3YFC7 |  |
| UniRef90-H2LGY3 |  |
| UniRef90-J2K0R0 | T L D P R |
| UniRef90-N4V0U1 | Q WK P N |
| UniRef90-K2LNT4 |  |
| UniRef90-D7DHY6 | T |
| UniRef90-UPI000273B67E |  |
| UniRef90-D0A5S1 | Q Y R P N |
| UniRef90-G8YKA8 | T Y |
| UniRef90-W6Q2Y1 |  |
| UniRef90-LOLOE9 | T F E G E |
| UniRef90-N6UP18 |  |





| UniRef90_A0A013XRF9 | T F T G |
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| UniRef90_UPI0003812043 | T L E P |
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| UniRef90_UPI0003725C75 |  |
| UniRef90_H4F0G3 | S Y |
| UniRef90_L7MJY5 | D Y K P N |
| UniRef90-A8LBM3 |  |
| UniRef90-E9V060 | V |
| UniRef90-UPI00037453C8 | T |
| UniRef90-UPI00036F2823 | 1 L Q P R |
| UniRef90 L9PGT6 |  |
| UniRef90-S9T7K2 | T |
| UniRef90_G9Y6E1 | G Y Q P |
| UniRef90_E3HWR2 |  |
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| UniRef90_UPI00047803FB |  |
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| UniRef90-A6R1T7 | P WE P |
| UniRef90_J4I8H9 | PWQ |
| UniRef90_UPI000255ABA5 | VF EP |
| UniRef90_UPI0004623122 | P W Q |
| UniRef90-M7MJN2 |  |
| UniRef90-UPI000368D4D5 | VF L |
| UniRef90- Q6X1T7 |  |
| UniRef90_J3CKU3 |  |
| UniRef90-UPI00040EC3A0 | T |
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| UniRef90_UPI0003B5983C |  |
| UniRef90-F0L790 | S Y |
| UniRef90-K1JTI7 |  |
| UniRef90-A6VRC9 | V F Q D K |
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| UniRef90-E8N9B0 |  |
| UniRef90-E8WCW8 | $V L D P R$ |
| UniRef90_UPI0002FC1A43 |  |
| UniRef90-E9BIZ1 | Q Y R P N |
| UniRef90_W7IG32 |  |
| UniRef90_A3VFZ6 |  |
| UniRef90-F5XTH5 | V |
| UniRef90-UPI000426334C | TF E P K |
| UniRef90-H2BUC6 | $\square F E P$ |
| UniRef90-A1B5X1 | S F |
| UniRef90_UPI0003AB567D | F Y K P N |
| UniRef90-U1MX92 | T |
| UniRef90_UPI00025584C3 |  |
| UniRef90_R7BSM4 | Y Y E G |
| UniRef90_L7PIL8 |  |
| UniRef90-B0S2C6 | Y Y H D E |
| UniRef90-C5A909 |  |
| UniRef90-R7YJ11 |  |
| UniRef90_UPI000374A41B | V |
| UniRef90_UPI00037A9343 |  |
| UniRef90-F7XDY8 | N Y |
| UniRef90_UPI00035CF885 | V L E |
| UniRef90_Q21BH7 |  |
| UniRef90_A3K7H7 | S F |
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| UniRef90-F3NGK1 | T |
| UniRef90-14YLN5 |  |
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| UniRef90-I2JTM3 | T Y T P N |
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| UniRef90-V5PPD6 | T |
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| UniRef90-I2X503 | G Y Q P Q |
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| UniRef90-A0CCA7 | L Y H G |
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| UniRef90_I2GR82 | T |
| UniRef90_UPI0002559C10 | V L Q |
| UniRef90-F8G8Q5 | V L K |
| UniRef90-UPI00038109FE |  |
| UniRef90-D2SED4 | T |
| UniRef90_UPI000248ED53 | K L N P Q |
| UniRef90_UPI0003B78FB9 |  |
| UniRef90_W9Gl16 | T |
| UniRef90_Q6LTY4 |  |
| UniRef90-A8M5A3 | Q H N P |
| UniRef90_D3P5Q5 |  |





| UniRef90_I5BZS5 | T |
| :---: | :---: |
| UniRef90-J3FDS8 |  |
| UniRef90-D7W3R4 | T |
| UniRef90_UPI00036EDA84 |  |
| UniRef90_UPI0004766B44 |  |
| UniRef90-UPI000237E56C | T F T G E |
| UniRef90-UPI000478D6AE | E |
| UniRef90_G9ZWT6 |  |
| UniRef90-A0A024J318 |  |
| UniRef90_A5DR98 | T Y H E N |
| UniRef90_UPI000377BDD0 |  |
| UniRef90-UPI00035D3C7B |  |
| UniRef90_UPI00046F1617 | F L Q |
| UniRef90-X7EF03 |  |
| UniRef90-14X1Z5 |  |
| UniRef90-Q9RC40 | T $\llcorner$ Q |
| UniRef90-U2RUQ8 |  |
| UniRef90-E9H2F8 | D Y K P N |
| UniRef90-Q08KE1 |  |
| UniRef90-W6RN39 |  |
| UniRef90-R7ZMM9 | T Y H S K |
| UniRef90_N6V4P8 | F L K E N |
| UniRef90-UPI0002197BF3 |  |
| UniRef90-UPI000262651E |  |
| UniRef90-R617P9 | P Y E |
| UniRef90-UPI0003817D3A |  |
| UniRef90-19E3X2 | V F |
| UniRef90-J9JR26 |  |
| UniRef90_UPI00047BAE7B | V LD G |
| UniRef90-K6W526 |  |
| UniRef90-A5E720 | $V \mathrm{Y}$ E K |
| UniRef90-A1U9N8 |  |
| UniRef90_UPI00042C959E | $\square$ |
| UniRef90-B1AS42-2 |  |
| UniRef90-A0A024HFL5 | T |
| UniRef90-Q9LCI9 |  |
| UniRef90-F7YRL2 | H |
| UniRef90-C6KTX9 |  |
| UniRef90-F1Z383 | T |
| UniRef90-N9VE28 | H |
| UniRef90-U1S8C8 |  |
| UniRef90-H2IJ78 | HLLK P |
| UniRef90-X6KWM2 |  |
| UniRef90-B8ND30 |  |
| UniRef90-A0A023D9N3 |  |
| UniRef90-UPI00036B93B2 |  |
| UniRef90-G6YWR6 | H Y H G |
| UniRef90-B0U0T3 | F Lie |
| UniRef90-X0NWR1 |  |
| UniRef90-V5WK49 | K |
| UniRef90-I1C558 |  |
| UniRef90-H6R8X6 | T |
| UniRef90-A0A011NWY6 |  |
| UniRef90_UPI00047BA1AA | T |
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| UniRef90-UPI0003B6AC1D |  |
| UniRef90-A6CUU4 |  |
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| UniRef90-UPI0004203139 | V F E P |
| UniRef90_V9VP95 | N |
| UniRef90_UPI000265750C | V |
| UniRef90-UPI0003A6F1A1 |  |
| UniRef90-UPI00040BAC92 | TF K P |
| UniRef90-UPI00028834C5 | V |
| UniRef90-UPI00030DD063 | T |
| UniRef90-A2W5M8 | T |
| UniRef90-UPI0002DF26CD | V |
| UniRef90_UPI0003815E84 | T |
| UniRef90-UPI0002E4F983 |  |
| UniRef90-UPI00036D4409 | T |
| UniRef90-A4A897 |  |
| UniRef90-UPI00036CC2E5 |  |
| UniRef90-N9ML79 |  |
| UniRef90_UPI00047AC008 | E Y T D R |
| UniRef90-UPI000346561B |  |
| UniRef90-F2NRZ2 | P VE G |
| UniRef90_S9QIP9 | H DA G |
| UniRef90-FOYE43 |  |
| UniRef90-G2TLI6 | T |
| UniRef90_UPI00047DA603 | T |
| UniRef90-A8F5J7 |  |
| UniRef90-UPI00040A6106 | T LQ P |
| UniRef90-A0A021X4M2 |  |
| UniRef90-M5FD57 | V W |
| UniRef90-B6EMQ0 |  |
| UniRef90-UPI000374B524 |  |
| UniRef90-C1GXP0 | E Y |
| UniRef90-S9ZIK4 |  |
| UniRef90_F6EMV7 | P F V]P R |





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| UniRef90-F9RNM1 | HLE E N |
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| UniRef90-D9XN99 | V |
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| UniRef90_UPI00030D4604 | V |
| UniRef90-UPI00037A27CA | T |
| UniRef90-V9WPZ1 | T |
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| UniRef90-B6QV44 |  |
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PVRDFQATVQAISALTPTIKGLRLALNQP WRNFKI A QKVVESDEI TSIIYLQPVDGGD $T \square Q L R G R E I V A H D V V A L T F T A P D G G D$
P V K D

ASTALPRDEFTDLVCTALTPVTHDVLDVTLRAADGGT
 TFNSLVVSEVRKLTEDSVEVSFAVPAQLQ

S LDD T QE EMYEYEVLASSNDFNHDSFELSLQSVQMEV
 FHRLRVADVEHLCDDAVAVTFDVPDHLA WRNFRI A AKHRESA I ITS FTGEPEDGGP FHRLRVASVERLCADAAAVTFDVPPEAD F QLRLL QTATVVDTYKLTPRVKGFRLRVPGTE $T \square R V A D D D A V G S Q T V A D Q F D S P S E$ FKEFKVTKI NRECVESKSFYIAPVDGAP T QVTVESVRDVGPETVADELETPD
RTFVVQEKRAESEYVTSFILVPADGGA WRPFIVVRRKVKESAEEVTMSFYLYPSDGGA


 $R P Y R I A R R I E E T Q D V V S L V L E P A D G G P$
D P PR TPVRVAKVTPDAERIKRFRFERDDGKP


EDOYY
EARKTLEETQRA WR R
DS F V T Y T L T A K E PVVSSSTAAS DF H F H D L H P K Q H
 WR P F K I Q K KVVP ET P Q I T S F Y L V P K D G K A

 F R D F VVV D K K V K E S E V I T S F Y L
 APSTQRRRTAFNELTVAEVRRLTGDADDVVTFAVPDHNY


$S S P R \square T A L \quad Q T R V V E V I R E T A D A H T L V L E P A E Q S E$
E V R H L T V D T V A V T L D V P D A R T

T A L G P R K F DP F D V VAA RE QVS P T S F I L T L K AP P S H S WRRFRVARTEMESTVIRSFYLEPEDGGP
K D WRD F K L L

D PH WRDF TI SDKVRESEE
VWRPFKVLDT I DES
K P G $\square$ S GEN
NTQQF
PGHF
PGHF GPARVVRRQCAPNVYKVRLQGDG
L E LVPEAG
 REFILTAAKVQESSEDT SFYFEPAD K G P
VF H D L K V A D l R R L T S C T L DS K S Ni T H D T L Q L H F RLLP E S C H VEATVRE IAPASHDDVRLRDE TSD
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## 10

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40
TPASAAPS FQATLESRRELTSDI TEFCFRGPAPAR
TPASAAPSASGWRADR AK VDEARADRSFHFDAADGAA $\square N D Q K F S P F E I V D R Q Q V S P T A F I V T V K L A S Q W K$ KV HE $\square R E V A D D T V A L T V R L D D P D E$ HAVKLLMTQFVTHDVKRFIVSKPPG
N P YK
 MLATVVETIQETGNIKTLRVVLDDPEQ HR $\square P V A S V D P \square T A D A T L V T$ FAVPEARD
WLT WRVERVEQESRD DRSFYLAPDRP
WHAATVASVVRETTNARRIVLDVP TW RPYRVVRRTQESPGTVSLVLEPADGAP
Q WRVARVVNSTPETESARTI GLAVPG VPCRVAEIVR\APDVVQVFLRVPPSAR

LE V D QVI SETSDAVTI RFSI PADDD

TSPPPAW
 NGWRDFRIENVARESSVISSFILRPVDGQP
 RETKVLESVDVAVDIKNDTFSCPEKLQQ


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ED GSVWRHWQVVECIQETADVISFRLVPADGGP
PVKTLPCRVESIEKI HDVAVLKLK!PASER MLDPNRFTPVTVKSVREVGPGTVALELETPDG
TTSVLAKTGPETF SAEVTKVGALSDTVVELEL EVEDRER
 YDATLTKISALTHDI R LLLEVELSSRPLS
DGYRNFDVDKKEDESNEVTSFYLTMEDGKV
STRGFQPLTI SSVQKETDSAVVIGFNVEAQQA


WREFRVLRREDDTHTQCSFYLVPVDGAA DA LTLD S KRQLTPSDMELTFVSSDP
$R \square S F S P E D L C F E A E I T E V S Q U S S N V Y R L C L K R D G T N Q$ NDWREFKIVEKKVTESDEI TS FYLK P V D GKP RGWRDFAV EKM
 F QLLRLVESMLA

AELI RVEPIAEREKVFEFRLKDGK R A F R L A R K K P E T S D D A R S SLLVF AVVPDPAE HRLLVARKVVRASTAEDAHSFIELREAPAEABD
R D F
TPARAAWHPQEFTA
F E CVVARTVIV P E E A


WK QFEVVGKDKV
NPYRSYDARIIEVKEL
LSATVTAI EPVTRD\|VSLRLLAVEPAT $R R L T I N A V D K I N E D$ VQATVAG
TTLHPA $\square F S R Y T D A A R E P V S S T S T L F T L R A R D Q Q D$

FKGFIVABKIKKSDVITSSIMFKLVDGGK
T DPDNWRPHRVVDRVEEARDVISLSLEPVDGRR

PPEPF DEPRQ LDCRVARDEDLCHDVRRDYLRTPGVER YSCTVASTRSVTPLI REIVLADPEPET
 LRIARKVQESEI ITS S FLLEPADGGV

HPARIDKGTVTALEQATHDVRRVVKLAKPAE


F N T L Tll A

UniRef90_UPIOOO35E6A70 UniRef90-A4JLC6 UniRef90-B2B713 UniRef90_K6X433 UniRef90_O3SHI5
UniRef90 B2TCMO UniRet90 B6W XA8 UniRef90-R4MOE3 UniRef90 B1J111 UniRef90-A0A022LYH5 UniRef90 L8DDI2 UniRef90-LOIXQ4 UniRef90-X2KCJ9 UniRef90-A0A022L5R6 UniRef90-F9UBN6 UniRef90-V61544 UniRef90-G7DLU1 UniRef90-UPIOOO465C560 UniRef90-B8KT77 UniRef90 UPI00037CAF05 UniRef90-K4E595 UniRef90-V9DAJ7 UniRef90-R1EGHO UniRef90-W2E2W1 UniRef90-UPIO0047B4741 UniRef90-D5ZYF8 UniRef90-R1H8H9 UniRef90-W3AEK2 UniRef90-GOFYT2 UniRef90-Q0CEI5 UniRef90 ${ }^{-}$E3IE82 UniRef90-UPIO00370B682 UniRef90-UPI0003B4CD78 UniRef90 L9WL40 UniRef90-D5NWS7 UniRef90_UPI000289CBD4 UniRef90-A4TLX7 UniRef90-A1WR56 UniRef90-C2V4F0
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UniRef90-AOAO24K4W3
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FRYHAGQY ${ }^{50} Q \mathrm{~F} \| \square R D$
60 70

70
80


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##  <br>  <br> 

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$\perp$
$\perp$$L N D A A P G Q F V L L D R A D P W D V A D M R H Y T$
$I N G D G Q$$\frac{\mathrm{L}}{\mathrm{L}} \mathrm{P} \square \mathrm{F}$ E




\section*{| Q |
| :---: |
| L |
| V |
| F |}


\section*{| A |
| :--- |
| L |
| E |
| V |
| L |
| R |
| F |}







 $\stackrel{5}{\mathrm{~F}}$



 $\qquad$ $F$ L P G Q $Y V N V Q V P$ GTTATRAYSFSSHPQATE

LDF TA GQYVELAAVPETGE TRPYSMANPPSEPGKLEF | $L$ | $R$ | $D$ | $F$ | $W R$ | $R$ | $A$ | $V$ | $W$ | $S$ | $V$ | $E$ | $A$ | $K$ | $Q$ | $P$ | $Q$ | $L$ | $Q$ | $\square$ | $A$ | $R$ | $A$ | $Y$ | $T$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |$P$


 L



 $F$ SP GQYAT LQRT, PEHIRRPYSMAGLPGDAEMEF Q A L S $\mathrm{F} \square \mathrm{S}$ G Q Y I T I K T Q V N E K E I R R A Y S



UniRef90 UPI0002559B6A UniRef90-M3INL3 UniRef90-G2XJ88 UniRef90-B9JQ18 UniRef90-UPIO003B47C05 UniRef90-A0A010S6B6 UniRef90-UPI00035F6157 UniRef90 H2K2X0 UniRef90_UPI0003721BBA UniRef90 K8WE30 UniRef90-D2AYN2 UniRef90-E3E3M9 UniRef90_UPI000479FCA3 UniRef90_E1T7R6 UniRef90-UPI00037E9500 UniRef90-H5UE51 UniRef90-UPI0004412F50 UniRef90-B6WS90 UniRef90-L2FZX3 UniRef90-Q2B142 UniRef90-UPI00037CA68F UniRef90_D5X4U3 UniRef90-J3HG16
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 GDE
REFKVVNKVQESELITSFYFEPVDGLP KTFKVI ELKKEADNVTTVTFQSNSEGY $P \mathrm{~V} K \square M P C R V Q K M E R V A D D V I V L S L K L P V N E R$ ATKDT TPLLPDDYLQLRVIDVVRETEDSATLVIKLPGWGR RAFRIVKKQPMTPTI WSIYLALEGETS TWKKAKVVS $\square T A D A S D F Y Q I R L A P N H H F K$ FHPLRVAETRRESPTVLSIVELESDDGEV NGWRAARVLEVRPESATARTLVLGRAS NQYHPLIVSETENIGNYAKKI RFVSETGGF PVRDYTGRVREMDDLTPTDKGUFVELDGNG\|
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 DPY LIP K E VVVSKIINES

K V V R Q R Q E S S SIIFTLRFTDEDHHK
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WFVATVSEVRPETPTAVRLVLDVPG REFIISEKKAESAVITSFVLTPTDGQA WHPQEF LAA ECVEVVPEAGGMLTFLVRRDDGAPD P L M DYRARVARIDTLTPTVKGVFLEDEGGDT

WRTFIVRDKRPESSVITSFVLEPADGQP
 EVWQSALVTGREQVSPDAVAFTLTVVDGTP STACKTAQS KFATTVTKDEP HNDAAVVLELDVDAA HPAK ILKGTVTGLENLTHDDKRVRVGIPKP VLVDRETVAEGVRRVTLRMPDGSD $K V 1 Q V D P E T P D A K T Y V L E E A N G K P$ $R R D R V A E V E Q V A A R \square K R F R L V D \square D N A P$ RDFIVQSKNVESEEDTSFLLAPADGQC
LLDPYEFHKFVI THKHQVDDDHF LI EI RPKFKNW
L H P ESQF LLKI KQVIEHSADERSFVLEPDTEKH
 AEPDEVVVHAAR RPFRI NRKEDVS RPFRIVSKQPQSSM CS
WAPVQLIDRRAQTADDDTCHFEFVFNNEER VNADEPDASNVVKLSLELAEGSW TDPEHWRDYRVVERFDESDEVFSLLLA PVSGEV PTLPLRYRITAKTSHS NGWRRFVVKDKRAESS
ATSQACKSGPQAYRG RI A SVEHLS

UniRef90_UPIOOO2559B6A UniRef90_M3INL3 UniRef90_S7VIM1 UniRef90_B9JQ18 UniRef90_UPIO003B47C05 UniRef90-A0A010S6B6 UniRef90_UPI00035F6157 UniRef90-H2K2X0 UniRef90_UPIO003721BBA UniRef90-K8WE30 UniRef90-D2AYN2 UniRef90-ЕЗЕЗМ9 UniRef90_UPIO00479FCA3 UniRef90_E1T7R6 UniRef90_UPI00037E9500 UniRef90-H5UE51 UniRef90_UPIO004412F50 UniRef90_B6WS90 UniRef90_L2FZX3
UniRef90_Q2B142 UniRef90-UPIO0037CA68F UniRef90-D5X4U3 UniRef90-J3HG16 UniRef90-H5XJK3
UniRef90- S5T9M0 UniRef90_UPI000367E3B9 UniRef90-NOAU02 UniRef90-R5S2N4 UniRef90-UPI0003772010 UniRef90-X71538 UniRef90_UPIO003813722 UniRef90-WOSBF9 UniRef90-B1L3Q2 UniRef9-A1UCN0 UniRef90-F5RGV5
UniRef90-Q7NGQ7 UniRef90-LOMLH4 UniRef90-N9BAC5 UniRef90-G8RYY1 UniRef90-T1ACF9
UniRef90_A6W412 UniRef90-M2C5Q9 UniRef90_G8MIT5 UniRef90_UPI0003696A47 UniRef90-G7GQJ1 UniRef90-UPIO004766DF3 UniRef90-Y5NZL8
UniRef90- W0BHX5 UniRef90-UPI00037AB8DD UniRef90_Q5X259 UniRef90_UPIO00371029A UniRef90-A4U463 UniRef90_GOHBZO UniRef90_C3UVE3 UniRef90_Q46PB5
UniRef90-F5RH93 UniRef90-A3K807 UniRef90-F8NC93 UniRef90_UPIO004627DE0 UniRef90_Q0HFV0 UniRef90 M7NEY9 UniRef90-Q0FPQ6 UniRef90_UPI000378F07D UniRef90 A9ARM9 UniRet90_M3QS72 UniRef90-A0PV13 UniRef90_F1YMN1 UniRef90_Q04WN6
UniRef90-G8ML35 UniRef90-A0A022GXM6 UniRef90_UPIO0036B72CD UniRef90_G8T6X0 UniRef90-F8J732 UniRef90-A0A024JVJ2 UniRef90_UPIO00288936C UniRef90-C4XVY2 UniRef90_UPI000314F922 UniRef90-W5WCY1 UniRef90-UPIO002375188 UniRef90_Q7N215 UniRef90-D2BU70 UniRef90_XOZA04
UniRef90_W2S8F4 UniRef90_Q0S4C6 UniRef90-A1K6X2 UniRef90-K9AG72 UniRef90-D3PVM2 UniRef90-G8ML13 UniRef90_UPIO003A81EA0
UniRef90_S5TFZ3

$R$ LG $\$ QPGQF ${ }^{50}$ NMLLYRFGVGE ${ }^{60}$ $V_{\mathrm{R}}^{\mathrm{S}}$
 KTVWNGDRFWSVEVKQPDINVVRSYTPLPDYG LQPEI DVY
 LAAFLPGQQVGQVQAFGTGEST V HL PGQHYVVRLTADDGYTASRSYSVSSAPGDP NFRYAFQSGQYINLQLPGVEGTRAFSLANPPSRADEVE
 $\stackrel{\rightharpoonup}{\mathrm{V}} \mathrm{F}$

L

 SFNYMPGQFVQVSVYGVGEAT
TFDYQPGQYI GGGLLIDDGRWRWRSY FRFLP GQAVWPRFEREGRDFTK】YSIAS VVFP GQA WRIASSPALVPEI ELC



 $F L P G Q$ Y ALLQLPGVDGPRAYSMSNIARDGATWHFQ

 FRYYAGQYVEVLMKNGD $\begin{array}{ll}D F T F R P G Q F N M L Y V F G V G E V \\ F & V\end{array}$ HFGFRPGQYLTLAVEVQGDEHWRCYSLTSEP
$F R P G Q \quad Y A L L Y P P R A P G A R A Y S M A N L P N E E G D W K F V$ PLDFQAGQY INLDI GAEPG MSRAFSLANAPSNGNEVE TFRFRSGEFVM GLPNADRPVMRAYSIASPAWDDTLEFYS MDF IPQKFNI FSLKAHNPEPT IRAYSMANYPAEGD IIMLT WPGSEAGSHLDLRTAPDGYQATRSYSDASSET
VK DFTPGQYLSMKLQHPKFDEDRQYSGLSDAPNGRTYRDSV
 .



| UniRef90_UP10002559B6A |  |
| :---: | :---: |
| UniRefof0-M31NL3 | PYHP |
| UniRet90-G2xJ88 |  |
| UniRet90_S7VIM1 | PY |
| UniRef90-B9JQ18 |  |
| UniRef90-UPI0003E | V |
| UniRet90-A0A010S6B6 |  |
| UniRef90-UPIO0035F6157 |  |
| UniRet90-H2K2X0 | VT |
| UniRef90-UPIO003721BBA | TLLQDR |
| UniRer90-K8WE30 |  |
| UniRef90 D2AYN2 |  |
| UniRef90_EЗЕЗМ9 |  |
| UniRef90 UP1000479FCA3 |  |
| UniRef90-E1T7R6 | T LiE |
|  |  |
| UniRef90-H5UE51 | V |
| UniRef90 UPIO004412F50 |  |
| UniRef90 B6WS90 |  |
| UniRef90_L2FZX3 | V |
| UniRef90-UPI00037CA68F | 1 |
| UniRef90-D5X4U3 |  |
| UniRef90 J3HG16 |  |
| UniRet90_-_5 5 JK3 | k |
| UniRef90_S5T9M0 |  |
| UniRef90_UPIO00367E3B9 | v |
| UniRef90 NOAUO2 |  |
| UniRef90-R5S2N4 | YNPR |
| UniRef90- ${ }^{\text {UPIITOOO3772010 }}$ |  |
| UniRef90- UPIO003813722 |  |
| UniRef90 Wosbey | H |
| UniRet90-W0SBF9 |  |
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| UniRef90-F5RGV5 | T $\square$ |
| UniRef90- LOMLH4 |  |
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| UniRef90 G8RYY1 | Lig |
| UniRef90_T1ACF9 |  |
| UniRef90 A6W412 | VWR P |
| UniRet90-M2C509 |  |
| UniRef90-G8MIT5 |  |
| UniRef90_UP10003696A47 |  |
| UniRet90-G7GQJ1 | V |
| UniRef90-UPIO004766DF3 |  |
| UniRef90-Y5NZL8 |  |
| UniRet90_WOBHX5 |  |
| UniRef90-UPI00037AB8DD |  |
| UniRef90-05X259 |  |
| UniRet90_UP1000371029A |  |
| UniRef90_A4U463 |  |
| UniRef90_GOHBZO | V |
| UniRef90 C3UVE3 |  |
| UniRet90-Q46 |  |
| UniRee90 ${ }^{-}$F5RHo |  |
| UniRef90-A3K807 | V |
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| UniRet90-QOHFVO |  |
| UniRef90-M7NEY9 | H |
| UniRet90_Q0FPQ6 | T |
| UniRef90-UPI000378F07D |  |
| UniRef90 A9ARM9 | ${ }_{\text {R }}^{\text {R }}$ |
| UniRef90-U3QS72 | R F |
| UniRef90-M1PE37 |  |
| UniRef90_AOPV13 | V |
| UniRef90 F1YMN1 1 |  |
| UniRef90-Q04WN6 UniRef90 G8ML35 | ■ |
| UniRef90-G8ML35 |  |
| UniRef90-A0AO22GXM6 |  |
| UniRef90-UP100036B72CD UniRef90-G8T6x0 |  |
| UniRef90_G876X0 UniRef90 F8, Fi32 |  |
| UniRef90-AJOO24 | V |
| UniRef90-UPIO00288936C |  |
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| UniRef90-UPIO00314F922 | YFEP |
| UniRef90 W5WCY1 |  |
| UniRet90_UP10002375188 |  |
| UniRet90_Q7N215 |  |
| UniRef90 D2BU70 |  |
| UniRef90-X0ZAO |  |
| UniRet90-W2S8F4 |  |
| UniRef90 OOS4C6 | T |
| UniRef90-A1K6X2 |  |
| UniRet90-K9AG72 | v |
| UniRet90_D3PVM2 UniRef90 G8ML 13 |  |
| UniRef90 ${ }^{-}$UPI0003A81EA0 |  |
| UniRef90-S5TFZ3 | R F |


 $R \vee V S V T R E T D D A A T I V I R B P G W G F$
K H A GKL A A I D R LT D S T DHFS D V D EPQQ
K K WE C E V V



 KEW ECEVISNRNVASF $\square$ KEFVVK LPE G E H QPREEPEWP GFRTMRVARTVRETPTVSSTYLDTTDGTP
 R R WQSA TVV T G S R R A E T A T A H T

 P C K V $V$ A

 EFRQAKVTK IVKETS DIVS IQMEIPEGYT FDSPR F TRFTIVSEENVSSTSKVLTDRPKTSDP


 K E W T D V V V $V$ S A I V Q
$\square$

 $\square K T K C I E$ E VE ES SVI K T FVVLE C GE D
 RVLEVRRETADSATVVIK PGWGF
WQPAELLAARAESATARTLILRRPG
$P C K V Q S \square N R L N H D V V Q V F L K I P \quad G D E$ WRDFVVACKVKESAEI TSFYLKPKDGGK $P$ VE D Y A A I A T D I V E L S P T I K G I H L K L T NLLSAD T E F A L L V V A E R Q R V A D G V V A L T F R R E N G G K

 FAATVSKVEP HEDAAIVLELEADAS
STACKTEQS
K F A A T $\quad$ V $T$ T H N D A A V V L E L D D D A S
 KYTRFRLLQKDSHKGDDKVLVLHFEKDDC





 Y Q TVEI SDVEEQA D GI RAL TFRT DGP L RTFSSCTM, VA RQK LTA DTALVVTLQSAWD DV
PAKTEQD H H T L Q V A A K D DV A E GVVVSLTLTDPD G G Q S T PALT GAPGPAWRDFVVQRDEDGNASVCSFYLVPA DGAP

 PKTEVKFED D $\square$ T A H P K D

HPGEPD K
FKDMD $\square E E$
TPLPYRVVDRRDETHDTVTLVLEPAGEA
K Y I V K I I EAA H F IIT H DVVKR FVV V K PA G Y D
 R P F R I VRVVKKELSDTFTFDLVAQDG A RTFSVASVRREADDVVADDLAPKDGDA

P NP Y L P AT T T E T $\square Q E T P$ T I K T F R V V L N S E E A S T K T K E N L T V V S Q E E D G K D

## UniRef90 A4ESG1 UniRef90_UPIO0035CAD24 UniRef90-UPIO002558F29 UniRef90-A1UZ98

FFDYOPGOF
${ }^{50}$ ~ ${ }^{60}$
${ }^{60} \mathrm{~V}$ HRTYT\|IS ${ }^{70}$
${ }^{80}$ VPAWLPGQYVTVRVPQLGIMQPRQYSLSSAPGGS TL VRAMHFGPGQYVNVQVPGTDQSRAYSFSSMVNEA WKGFAGQYHEPVVTVEGAGRRVRRSYSMACAPNEKNLVELH S
GDDPSLPTCLKVLHPEGTDEAGRPYSPVSHPATEGSVDLV FRFRTGEFVMDGLPREDGKP LRAYSDASPAWDDELEFYS KSDSAFEQFPFVRRFGPDGSLSRAYSVVS
WRYSPGQF TTLRVPSDRTGSVARCYSLSSSPTTDDRDTVT WQYWNGDKIWSVDVKQPDDMVVRAYTPLSEYTRSGDRKPL FKAEWDKFNMWGLTGKNTEETVRAYSMANYPAEGNLDTLN YLPAWEKFGDFGLKCVNTEETVRAYSMANYPAEGDRIMLT LPEARPGQYLS RLAVGDAPAVRSYSLSSAPTAGAYRISV EFRFRPGQALTLRRREGELDERRSYSLCGPAGSAPR LGQFLAGQYVDILLKDGK KMARSFSLANAPHDDEFLQ hPDYLPAQHIVVVKDPGHPLTRAYSLTGPDVERGYRI AV LVAYEPGQYLSLRIKLKELEHNRQYSLTKAFDGESYQVAL LSFLPGQ YVNVGIPGTELTRAYSFS S
 WQGFKAGQFVKLSVEDDGDRRTRCYSPANSQF
VADYKPGQY YY N ADELEHQEDRQYSGSSTPNSTNYRDSV RFAFKPGQFNMLYVFGVGEV VRYS RNANKTDQYDTVKTDPAGSEHDRHYS LYSANSDQGUQFAVV YAVYWENGLWSVEFKQPLLQQUASYTPLPP FTGFEAGQFDQVSVVIDGVRQTRCFSPAGSALWPGDL
LPARAGQFCFWRFPGHNHWWLANPFSLSTAPDGRALRTTA LDP ELDPGQY SSMTSHFGYMQSRQYSLSDAPRSGRYRISV
 LIPAFTGGSHIFVQM
$F N P G Q Y V L I S P A G$
 पPAFTAGSHLTVQVPNG ARRNYSLCS WQPGQYVHYTLPHDNADDRGDERWF HFDYTAGQYIGIGLLVDGRWRWRSYSLTSSP WPGHRPGQHLDVRLTAPDGYHAERSYSLAAPADGDHTEVT SLQYLAGQYI DLIHPDFDP RAFSIANAPVNSSLIE
LPDFKPGQFLTVKLSDPDRPTDRTYSLSDYAPTAGAGDER



| UniRef90 | A4ESG1 | T |
| :---: | :---: | :---: |
| UniRef90 <br> UniRef9c | UPIO0035CAD24 |  |
| UniRef90 | A1UZ | $R \square D G$ |
| UniRef90 | UPI0002DB6308 |  |
| UniRef90 | N1VWT6 | V |
| UniRef90 | UPI00047D8B3D | v |
| UniRef90 | -Q13LJ8 |  |
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| UniRef90 | F3ZU85 | H |
| UniRef90 | A0A059FPC2 | v |
| UniRet90 | Q9RAL |  |
| UniRer90 | - |  |
| UniRef90 UniRef90 | AOR525 Q6B1R8 | $\stackrel{V}{*}_{\text {V }}$ |
| UniRee90 | E4TAS8 |  |
| UniRef90 | R5G6R5 |  |
| UniRet90 | U2DV31 |  |
| UniRef90 | A0A014PA09 | VLE |
| UniRet90 | UP10004030D25 |  |
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| UniRer90 | E9UNZ6 |  |
| UniRef90 UniRef90 | - | E |
| UniRee90 | G4NDV3 |  |
| UniRef90 | G2J3C4 |  |
| UniRef90 | M1NUP9 |  |
| UniRef90 | F9RCN7 | F VK D N |
| UniRef90 | UPIO003A24C0C |  |
| UniRet90 | W9A307 |  |
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| UniRet90 | -Q1QCV6 | E |
| UniRet90 | C4GDA7 |  |
| UniRee | WSCHZO |  |
| UniRet90 | DSURF0 |  |
| UniRef90 | M3G126 |  |
| UniRef90 | M3D9H8 |  |
| UniRef9c | Q76KR4 |  |
| UniRet90 | -9S615 |  |
| UniRet90 | U2P806 |  |
| UniRee90 | UPIO0047AE5B4 | K |
| UniRer90 | D3V101 |  |
| UniRet90 | F4CMB2 |  |
| UniRet90 | C5CEV8 |  |
| UniReef90 | Q12CA0 | ELHPR |
| UniRef90 | V5RW16 |  |
| UniRee90 |  |  |
| UniRer90 | W88308 | Y |
| UniRef90 | - 15 D8S5 |  |
| UniRee90 | Q84AQ0 |  |
| UniRef90 | V8GA83 |  |
| UniRef90 | UPI00036D9B47 |  |
| UniRet90 | F1Z4E1 |  |
| UniRef90 | WODEZ5 | V |
| UniRet90 | UPI0003FB319D | $\stackrel{\text { V }}{ }$ |
| UniRef90 | G8SE21 | T |
| UniRet90 | Q3C2D2 |  |
| UniRef90 | R4X3 |  |
| UniRef90 | H1SIQ4 |  |
| UniRet90 | Q29GQ2 |  |
| UniRef90- | -A6SYL6 |  |
| UniRet90 | E1VYE7 |  |
| UniReef90 | U2SF85 |  |
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| UniRef90 | -25AX11 | H |
| UniRet90 | Woon87 |  |
| UniReef90 |  | SYH |
| UniRet90 | A4FON9 |  |
| UniRet90 | Q11TL8 |  |
| UniRef90 | U6BCV3 | T |
| UniRef | AOAO |  |
| UniRee90 |  |  |
| UniRet90 | I3YGZ8 | H |
| UniRee90- | UP100037534F5 | V |
| UniReef90 | -A1KBA6 |  |
| UniReef90 | V5TXT8 |  |
| UniRef90 | UPI00025583CA |  |
| UniReef90 | X5E1N8 | F पK D N |
| UniRef90 | UPIO0036FE874 |  |
| UniRef90- | V6S2C5 | QYKG |
| UniReef90 | UPIO00317617 |  |
| UniReef90 | FOKIB2 |  |
| UniRet90 | K9HQSO |  |
| UniRet90 | -10G7L1 | T |
| UniRe | N6Y182 |  |
| UniRef90 | D41Y01 | PY |
| UniRee90 | L8F4D9 | T |
| UniRet90 | E5XRI1 |  |


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L T V A A R T L V A D G V V S L T R R R P D G G P
$$ PARIAD AETRG DMAVLTIALPKAPP HSGVVRELRLLSEDTALLRLDAGAAGR REFRI SADTDQSSVIKSIELTPVDGAA

DVWDQATVVRRQDESADVA GFELRGVSGKL

$T \square L D N Q Y F P Q E A E I V K F \square Q E S K T \square F T L H L R \square T D P D E A$





 TTAVVTKRELLTPDVVALTFADAQGGL
RKLYTARLERKDCDIS DQCYMFEFVIDDEDDA KVIKNVVITSMVK I Y S M WI K DKDL
 SKPT $\square N \square Y T \square G K P A E A R V T G N Y R L T S D V R H U I L D F G Q P F P$
 A QANGVMWSPWRVAAKTAAGTGSMTFTLEPADDTP



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FKS D WE K F GLLWPLVVMKNSE TVVERAYSMASYPAEGRE\|MDNN $A D S F D P G Q F N M L Y L F G V G E A \quad P \square S \square C G N T D W K D R Y V H T$ LD YRPGQY LKLLSSEG LLARSFSMASVP LPRWHPGSHLDIHDPS G LVRQYSLCGDPDEQGAYRDA FRAGSYVQVEDPPFRSHDTPLHRTYSLANSPGELGDULLN $V A F \quad Q A G Q Y L N D Q V P G C D Q P R A F S L A N A P D E E$ LPPFSGGSH VVVTMDAEGRTYRNPYSLMGSPSDTRAYH $V L R W D P G Q Y A T V S F R D M G Y S H M R D D D P T S D N D D Y D R T F T V$

LPA WT PGTH $\quad$ DVLLD GEGGDLVRQYSLCGHPADRETWQUA
FVFHSGQYMEILLKDGS KI RSYSUANAPHESGTLEF
QLDFLPGQYARLQV PGSDCRRAYSFANRPNPQNHLQFL

 TFRFRA GEFVMLGLEGEKKPGLRAYSVASPTWDEEDEFYS V DDYQAGQY DEVQRKQSEFKEADRQYSGUSAKANGESYRDSV GDALRFQPGQYVNVWDGKEATPRAFSUASAPSADE LNFQPGSYUMWGLVCKNDEETYRAYSMANHPAEGNVVMDN
 FRFRAGQFARLGVTKADGSTVWRAYSMVSSPFDE
HFMDH $\square$ FAHFEI CQQNDTNQVSRKYTPIY DDQEKKEVH L F SQF $\square P G$

EAGQYVEQVVPGSGARRQYSLANTADEDKVLE FRFRSGEFVMUGLMMDDGKPAKRRAYSUASPSWDEEGEFFS DNFQWDKFKMWDLSARNDEETVRAYSMANYPAEGNNGITRUN VIDYKAGQYI Y LDDTVFENREDRQYSLTTAPN LPRWTPGSHIDLHCGDTG DSRQYSLCGDPQQANTYE円A LPPFSGGSNVVVLIPHASGTYRNAYSGLMSSPYDSSAYQQIAC
 FQF RAGQY ILDFLLPDGQWKNARSFS PANAPG

| VA AFKPGQYLT |  |
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|  |  |
|  |  |
|  |  | PVVAAPGQFTMLYAFGVGEV

 PGHLDAGQRVDIRLTAEDGYRASRAYSLAAPAD Y DPTWQKFNDFSLKAHNPEETVRAYSMANYPAEGDRDTDT $\begin{array}{ll}H A N Y T Y H P G Q F N M L Y L Y G V G E V & A D S V V S D P E H E D L L V H T \\ D F Y P W Q P G Q Y A L V S I A N S S E T L R A Y T L S S S P G L S P F I T F T\end{array}$



[^1]


90
100
110
120

 $R D G R \square D \square H V R R \square P G G A F T G I L P R M R A G B A I E V E L P L G S F$

 VR RQESS R




 VKR L $\quad$ V VGD T P



P $\begin{array}{lllll}1 & K & V & & \\ I & K & S & L & \\ K & R & E & I & V \\ l l l l\end{array}$

G

V
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K P G
$M R \square Y \stackrel{F}{R}$
EFFS VVVP
$P C E K Y P P G G E F T S E L S R L Q V G D T L L V$
 $1 \mathrm{~K} V$ KV P D GPLT QHL Q K I K E G D HV L L K A MVG G $V$ RIA T P P ID R N T HPA G IS S S YI F S L K A G DKVRRMS GPYGDF V K R


 $\vee \mathrm{K}$


## G L

 GPMS QHLA DL H IDD DVLQFRGP IG S Y K R E A Q G TV S GWLLHQN V R A V G $L$ SKVFT S GAVTEADCATARPGDELMLAAPBGDF 1 NRV R



IK G M
1 R
$\vee{ }_{\mathrm{K}}^{\mathrm{R}} \mathrm{T}$ A
K R
R R A
RFDSEH
$\mathrm{V} R \mathrm{R}$ I
1 K V

LH P Q
 EEQGTVSNFLHNAQEGDI
V P G G F F T D Y F NKMK D K A L L
E D S R G G S R Y M WQ G P P L G G F
GSSFKKDLDA SL N I GEALDDAEGPMGGF
A D G G GGS DEMHSFDVGDTIEFE GPRNAF
YPEHN G IT V A LLS K LLKVVND T LITTDA WD S F YRANRFDLCVNRVEGGFFSNHLADLPPGASVKMHGPHGHF ARVVGKTKEFSKMNAGDTIRVMGPLGNF $A R V$
$\mathrm{~V} R \mathrm{R}$ $\square D G G T G G S G L A H A L A E G D V L T T$ R GPRRAF NFNNLS LTVKREPHG GCSNHVCDLLKPGD TVVRVTGPF GA VRREE QSKGGSAFMH DKVEDGSQLTIAAPNNLF

 $\square T V L E V G D A T A A L F A M R E G B R I \quad G I \quad R G P Y$ G N F

lupas_21
lupas_14
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jnet
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sol25
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jhmm
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lupas_21
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[^0]:    lupas_21
    lupas_14
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[^1]:    lupas_21
    lupas_14
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    jnet
    conf
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