

|                        |   |   |   |   |   |   |   |   |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |   |   |
|------------------------|---|---|---|---|---|---|---|---|---|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|---|---|
| QUERY                  | 1 | K | S | P | E | E | L | K | G | 10 | F | E | K | Y | A | A | K | E | G | D | P | N | Q | L | S | K | E | E | L | K | L | L | L | Q | T | E | F | P | S | L | L | 40 |   |   |
| UniRef90_U3KC05        |   | A | M | E | T | L | I | N | V | F  | H | H | Y | A | S | G | K | E | G | D | K | Y | K | L | S | K | K | E | L | K | E | L | L | Q | S | E | F | L | G | C | F | L  |   |   |
| UniRef90_F7A2T7        |   | K | S | I | V | T | V | I | D | I  | F | F | Y | H | Y | A | T | Q | G | E | D | C | E | T | L | S | K | K | G | E | L | K | E | L | L | E | N | E | F | R | P | I  | L |   |
| UniRef90_UPI0003594CFB |   | R | G | I | V | T | V | I | E | V  | F | Y | Q | Y | A | T | E | G | D | E | N | C | D | M | L | S | N | K | K | E | M | K | E | L | L | E | N | E | F | H | Q | I  | P |   |
| UniRef90_M7B0L3        |   | R | C | I | E | S | L | L | A | V  | F | F | Y | Q | Y | A | T | G | R | E | G | E | N | C | T | L | S | K | K | E | F | L | S | F | M | N | V | E | F | L | A | S  | F | P |
| UniRef90_UPI00045E0CFE |   |   | I | V | S | I | I | E | V | F  | F | Y | Q | Y | A | T | G | E | G | E | C | G | D | M | L | S | S | K | A | E | L | K | E | L | L | E | K | E | F | Q | Q | I  | P |   |
| UniRef90_UPI0003332CE6 |   | R | S | I | V | D | I | T | E | V  | F | N | Q | Y | A | T | S | H | N | C | D | G | A | S | L | S | S | K | K | D | L | K | N | L | L | E | R | E | F | L | Q | R  | I | P |
| UniRef90_UPI0003F10BFC |   | Q | S | I | V | S | I | I | E | L  | Y | Y | Q | Y | A | A | Q | D | R | D | S | D | K | L | N | K | A | E | L | K | E | L | L | L | E | N | E | F | H | Q | I | P  |   |   |
| UniRef90_UPI000394532D |   | K | A | M | D | V | I | I | D | V  | F | H | Y | Q | Y | A | S | R | R | E | G | D | R | D | T | L | T | K | A | E | L | K | M | L | L | D | K | Q | L | A | N | Y  | L |   |
| UniRef90_UPI00027FBEFC |   | S | I | I | T | V | I | I | D | V  | F | Y | Q | Y | A | T | K | Y | G | E | Y | D | M | L | N | K | A | E | L | K | E | L | L | L | E | N | E | F | H | Q | I | P  |   |   |
| UniRef90_Q7ZVA4        |   | R | A | M | E | T | L | I | T | V  | F | H | Y | S | G | A | E | G | N | S | S | T | L | S | R | R | E | L | K | Q | L | L | M | E | K | E | F | L | A | S | F | Q  |   |   |
| UniRef90_UPI000350A733 |   | R | S | I | V | T | I | I | D | I  | F | F | Y | K | Y | T | E | G | D | G | C | G | T | L | S | S | K | D | E | L | K | E | L | L | E | K | E | F | H | P | I | P  |   |   |
| UniRef90_J3SF83        |   | R | C | I | E | S | L | L | A | V  | F | Q | R | Y | A | G | R | D | S | N | S | K | S | L | S | S | K | K | E | F | R | T | F | M | D | T | E | L | G | S | F | Q  |   |   |
| UniRef90_UPI000194DB50 |   | A | L | E | C | A | V | N | I | Y  | H | R | Y | A | V | Q | R | P | V | D | D | Y | L | S | K | N | E | F | S | K | L | L | L | K | E | T | A | E | P | F | T |    |   |   |
| UniRef90_UPI0001D54E65 |   | R | N | I | E | T | I | N | T | F  | H | Q | Y | A | S | V | K | L | G | H | D | D | T | L | N | R | R | E | F | K | Q | L | V | N | K | D | L | A | N | F | L |    |   |   |
| UniRef90_UPI000333E9CD |   | R | Y | I | E | S | L | L | A | V  | F | Q | K | Y | A | G | R | D | S | T | T | L | S | S | K | K | E | F | L | A | F | L | L | E | N | K | E | F | L | Q | A | F  | T |   |
| UniRef90_UPI000274221E |   |   | I | I | S | I | I | D | I | F  | H | Q | Y | A | K | K | D | V | E | T | D | T | L | S | S | K | N | E | L | K | E | L | L | L | E | T | Q | L | S | R | V | L  |   |   |
| UniRef90_F7F9Z9        |   | Q | S | I | V | N | I | I | D | I  | F | Y | Q | Y | A | E | D | D | G | C | E | T | L | S | S | K | K | E | M | K | E | L | L | L | E | K | E | F | L | S | S | I  | M |   |
| UniRef90_UPI0003346750 |   |   | A | M | E | T | L | I | N | V  | F | H | T | Y | S | G | K | E | G | D | K | Y | K | L | S | S | K | K | E | F | K | E | L | L | Q | A | E | F | L | A | G | F  | Q |   |
| UniRef90_UPI00034FBA83 |   | Q | A | I | E | T | L | I | S | V  | F | H | T | Y | S | G | R | E | G | D | K | C | K | L | S | S | K | R | E | M | R | D | L | I | Q | N | E | L | A | E | Y | L  |   |   |
| UniRef90_G1KH89        |   | A | M | D | T | L | I | I | R | V  | F | H | T | Y | S | A | K | E | G | D | K | Y | K | L | N | K | G | E | L | K | Q | L | L | I | T | S | E | L | T | D | F | L  |   |   |
| UniRef90_D2I9F2        |   |   | I | N | G | I | I | T | V | F  | Y | T | Y | A | R | S | D | G | D | S | T | L | S | R | G | E | L | R | Q | L | L | I | E | K | E | F | G | D | V | I |   |    |   |   |
| UniRef90_UPI0000F2C3F2 |   |   | I | D | G | I | I | Q | A | F  | S | R | Y | A | K | T | E | G | D | C | T | T | L | T | K | G | E | L | K | K | L | L | L | E | Q | E | L | A | D | V | P |    |   |   |
| UniRef90_UPI00032A3D8C |   | Q | A | M | A | L | L | I | G | T  | F | H | K | Y | S | G | K | E | G | D | K | L | T | L | S | S | K | G | E | L | K | E | L | L | L | Q | N | E | L | A | D | I  | F |   |
| UniRef90_G1T231        |   | R | N | I | N | G | I | I | E | A  | F | G | R | Y | A | R | M | E | G | N | C | Q | V | L | S | R | G | E | L | K | R | L | L | L | E | H | E | F | A | D | V | P  |   |   |
| UniRef90_H2MLR9        |   |   | A | M | E | D | L | I | T | V  | F | Y | K | Y | S | G | K | E | G | D | K | Y | K | L | N | K | K | E | L | K | N | L | L | H | E | E | L | S | E | F | L |    |   |   |
| UniRef90_UPI00022F65E8 |   | Q | G | M | E | T | I | I | K | T  | F | H | Q | H | A | G | K | E | G | N | P | D | T | L | S | S | K | K | E | F | K | Q | L | V | N | K | D | M | P | N | V | K  |   |   |
| UniRef90_UPI000383D194 |   | R | C | I | K | S | L | I | A | V  | F | Q | K | H | A | G | R | D | G | N | S | K | L | S | S | K | A | E | S | L | I | F | M | N | E | L | G | A | F | T |   |    |   |   |
| UniRef90_A8HG28        |   |   | C | M | E | S | L | I | K | V  | F | H | R | Y | A | S | K | E | G | N | S | N | S | L | S | S | R | R | E | L | K | E | L | M | E | N | E | L | N | T | F | Q  |   |   |
| UniRef90_UPI000273BB46 |   | S | I | I | T | I | I | K | V | F  | H | Q | Y | A | E | M | N | D | C | T | S | L | C | L | S | S | K | K | E | L | K | H | L | L | E | E | F | K | E | I | P |    |   |   |
| UniRef90_G3WVB3        |   | R | C | I | E | S | M | I | A | V  | F | Q | R | Y | A | G | R | E | N | S | P | N | T | L | S | S | K | T | E | F | L | S | F | M | H | T | E | L | A | S | F | N  |   |   |
| UniRef90_H9H0S2        |   |   | A | L | E | C | A | I | N | I  | Y | H | H | Y | A | I | R | N | P | M | D | D | Y | L | S | S | R | N | E | F | A | T | L | L | K | E | N | A | K | P | F | V  |   |   |
| UniRef90_U3FBA4        |   | Q | A | L | C | T | L | V | A | I  | F | H | T | Y | A | G | K | E | G | D | K | N | S | L | S | S | K | S | E | L | K | E | L | I | K | K | E | L | T | G | P |    |   |   |
| UniRef90_H3CCR1        |   |   | A | M | E | N | L | I | L | V  | F | H | T | Y | S | G | K | E | G | D | K | Y | K | L | S | S | K | H | E | L | K | N | L | L | K | G | E | L | G | D | I | S  |   |   |
| UniRef90_W5LAN5        |   | Q | A | M | A | M | L | I | S | T  | F | H | K | Y | S | G | K | E | G | D | K | F | T | L | S | S | K | G | E | L | K | E | L | L | L | N | K | E | V | F | G | Q  | S |   |
| UniRef90_E1C1S0        |   |   | A | M | N | T | F | I | R | I  | F | H | H | Y | S | G | K | E | G | D | P | R | Y | K | L | S | S | K | R | E | L | K | E | L | L | S | R | E | L | T | D | F  | Q |   |
| UniRef90_UPI0002C66A67 |   | R | S | I | E | T | I | I | N | V  | F | H | H | Y | S | S | V | R | L | G | H | P | D | T | L | N | R | K | E | F | K | Q | L | V | Q | K | E | L | A | N | F | K  |   |   |
| UniRef90_UPI00038C27E6 |   | R | S | V | L | C | V | I | E | T  | F | H | K | Y | S | R | E | D | G | D | K | A | R | L | T | C | R | E | L | K | R | L | L | L | Q | G | E | F | G | D | F | P  |   |   |
| UniRef90_B5X8K1        |   | Q | A | M | A | L | L | I | A | A  | F | H | K | Y | S | G | K | E | G | D | K | T | T | L | S | S | K | G | E | L | K | D | L | L | N | A | E | L | G | E | I | M  |   |   |
| UniRef90_I3MSF0        |   | R | C | M | E | S | L | I | A | V  | F | Q | K | Y | A | G | K | D | G | N | S | T | L | S | S | K | G | E | F | L | S | F | M | H | T | E | L | A | A | F | Q |    |   |   |
| UniRef90_UPI0003D080A1 |   | Q | A | I | G | A | L | V | Y | V  | F | H | K | Y | S | G | K | E | G | N | K | D | T | L | S | S | K | Q | E | L | K | E | L | I | Q | K | E | L | S | L | G | P  |   |   |
| UniRef90_UPI0003315A16 |   |   | S | I | I | N | V | I | K | V  | F | Q | Q | H | A | E | E | D | G | D | C | T | S | L | C | L | S | K | E | L | K | Q | L | L | L | T | E | F | G | D | I | P  |   |   |
| UniRef90_G3W4S8        |   |   | I | C | T | I | I | G | I | F  | H | K | Y | S | S | K | E | G | D | K | N | T | L | S | S | K | K | E | L | K | E | L | I | Q | K | E | L | C | L | G | A |    |   |   |
| UniRef90_G1SQV2        |   |   | A | M | G | M | I | I | D | V  | F | A | R | Y | A | G | G | E | G | D | P | Q | S | L | T | K | G | E | L | R | V | L | M | E | K | E | S | C | S | N | G |    |   |   |
| UniRef90_R7VRH4        |   | Q | A | L | A | V | M | V | T | T  | F | H | K | Y | S | G | K | E | G | D | K | Y | K | L | S | S | K | G | E | L | K | E | L | L | N | K | E | L | P | V | I | Q  |   |   |
| UniRef90_H9G3V9        |   | R | C | I | E | S | L | L | A | V  | F | H | K | Y | A | K | G | D | R | D | A | N | T | L | S | S | K | E | E | F | K | R | F | M | N | T | E | L | A | S | L | K  |   |   |
| UniRef90_G5BER2        |   |   | A | M | E | T | L | I | N | V  | F | H | T | H | S | S | K | E | G | D | K | Y | K | L | S | S | K | K | E | L | K | E | L | L | Q | T | E | L | S | G | F | L  |   |   |
| UniRef90_UPI0003289539 |   | R | S | F | F | D | I | T | E | I  | F | Y | Q | Y | A | S | N | D | C | N | G | A | A | L | T | K | K | D | L | K | L | L | E | R | E | F | G | D | V | P |   |    |   |   |
| UniRef90_E2R9U5        |   | R | N | I | H | G | I | I | E | A  | F | Q | H | Y | A | R | T | Q | G | S | C | T | V | L | T | R | G | E | L | K | R | F | L | E | H | E | F | A | D | I | I |    |   |   |
| UniRef90_UPI0003343D8B |   | R | S | I | D | V | I | I | N | T  | F | H | Q | Y | S | V | R | R | D | D | P | D | T | L | S | Q | Q | E | F | K | Q | L | A | R | K | E | L | P | N | F | L |    |   |   |
| UniRef90_UPI0003B69A63 |   |   | M | Q | L | M | I | I | Q | T  | F | H | K | Y | S | G | N | E | G | D | K | Y | T | L | S | S | R | A | E | L | K | E | L | L | T | T | E | L | G | T | Y | A  |   |   |
| UniRef90_H2PFX2        |   |   | A | M | D | T | M | I | R | T  | F | H | R | Y | S | C | K | E | G | N | R | F | E | L | S | S | K | G | E | L | K | L | L | Q | R | E | L | T | E | F | L |    |   |   |
| UniRef90_G1LC22        |   | K | D | V | L | C | V | I | K | T  | F | H | K | Y | A | Q | E | D | G | D | K | A | T | L | T | C | A | E | L | K | Q | L | I | Q | G | E | F | G | D | I | V |    |   |   |
| UniRef90_S9XE97        |   | Q | A |   |   |   |   |   |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |   |   |

|                        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QUERY                  | K | G | P | S | T | V | L | D | E | K | L | F | E | E | L | D | K | N | G | D | G | E | V | S | F | F | E   | E | F | Q | V | L | V | K | K | L | S | Q |   |   |   |   |
| UniRef90_U3KC05        | K | T | Q | G | A | V | L | E | K | L | F | E | E | L | D | D | K | N | G | D | G | E | V | S | F | F | E   | E | F | Q | V | L | V | K | K | L | S | Q |   |   |   |   |
| UniRef90_F7A2T7        | K | H | P | Q | D | T | V | D | V | I | M | Q | I | L | D | D | R | D | H | D | R | N | K | V | D | F | F   | T | E | F | L | V | L | M | V | A | K | L | T | Q |   |   |
| UniRef90_UPI0003594CFB | D | D | P | D | T | V | D | I | L | M | Q | S | L | L | D | D | R | D | H | D | R | N | K | V | D | F | F   | T | E | F | L | L | M | I | V | K | L | T | Q |   |   |   |
| UniRef90_M7B0L3        | V | R | P | T | E | T | E | R | I | C | E | S | L | L | G | R | E | D | G | N | K | V | D | F | F | T | E   | F | L | L | S | F | M | I | F | K | L | S | Q |   |   |   |
| UniRef90_UPI00045E0CFE | D | D | P | D | T | V | D | V | I | M | Q | S | L | L | D | D | R | D | A | N | E | K | V | D | F | F | T   | E | F | L | L | V | M | I | F | K | L | S | Q |   |   |   |
| UniRef90_UPI0003332CE6 | H | D | P | E | T | I | D | L | T | L | E | L | L | L | D | D | R | D | A | N | E | K | V | D | F | F | T   | E | F | L | L | L | I | F | K | L | T | A | Q |   |   |   |
| UniRef90_UPI0003F10BFC | D | D | P | D | T | V | D | V | I | M | Q | S | L | L | D | D | R | D | A | N | E | K | V | D | F | F | T   | E | F | L | L | L | M | I | V | F | K | L | T | A | Q |   |
| UniRef90_UPI000394532D | K | H | K | A | T | I | D | Q | I | L | M | K | S | L | D | D | V | N | K | D | A | K | Q | V | D | F | F   | T | E | F | M | L | L | V | F | T | R | V | L | T | A | Q |
| UniRef90_UPI00027FBEFC | N | D | P | D | T | V | E | L | L | K | S | L | L | L | D | D | R | D | H | D | R | N | K | V | D | F | F   | T | E | F | L | L | M | I | V | F | Q | L | V | Q |   |   |
| UniRef90_Q7ZVA4        | K | D | P | A | A | V | D | K | I | M | K | S | L | L | D | D | A | N | G | D | K | G | V | D | F | F | T   | E | F | V | S | L | V | V | I | G | L | S | Q |   |   |   |
| UniRef90_UPI000350A733 | D | D | P | E | T | V | D | V | I | M | Q | M | L | L | D | D | R | D | H | D | Q | R | V | D | L | I | E   | F | L | P | M | V | F | K | L | V | M | A | Q |   |   |   |
| UniRef90_J3SF83        | K | D | P | A | V | I | D | R | M | M | K | K | L | L | D | D | M | N | S | D | G | Q | V | D | L | F | S   | E | F | L | N | L | I | G | G | L | A | Q |   |   |   |   |
| UniRef90_UPI000194DB50 | S | T | D | S | Y | I | Q | Q | L | F | T | K | A | L | D | D | A | N | H | D | G | R | L | K | F | T | E   | F | L | T | T | L | S | L | V | A | K | Q |   |   |   |   |
| UniRef90_UPI0001D54E65 | K | K | E | K | K | I | D | H | I | M | E | D | L | L | D | D | T | N | A | S | D | K | Q | S | F | F | T   | E | F | L | M | L | M | A | R | L | T | A | Q |   |   |   |
| UniRef90_UPI000333E9CD | K | K | Q | G | V | L | D | Y | T | M | K | K | L | L | D | D | L | N | S | D | G | K | W | L | D | F | T   | E | F | F | N | L | I | G | G | L | A | Q |   |   |   |   |
| UniRef90_UPI000274221E | K | N | P | D | V | A | D | V | F | M | H | I | L | L | D | D | L | N | S | H | N | K | V | D | F | T | E   | F | L | L | L | I | F | K | L | A | Q | M |   |   |   |   |
| UniRef90_F7F9Z9        | K | D | P | Q | I | L | E | A | I | F | H | I | L | L | D | D | Q | D | H | D | K | K | V | D | F | F | T   | E | F | L | L | M | V | F | K | L | A | M |   |   |   |   |
| UniRef90_UPI0003346750 | K | D | S | E | T | V | D | K | L | M | K | E | L | L | D | D | E | N | E | D | G | E | V | D | F | F | T</ |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

|                        |   |   |    |   |    |   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|------------------------|---|---|----|---|----|---|----|---|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|                        | 1 |   | 10 |   | 20 |   | 30 |   | 40 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| UniRef90_F7IHR9        |   | L | E  | G | I  | V | N  | I | F  | H | Q | Y | S | V | R | T | G | N | F | D | T | L | S | K | G | E | L | K | Q | L | M | A | K | E | L | V | N | L | I |   |   |   |   |
| UniRef90_UPI00046B5891 | S | V | L  | N | V  | I | N  | K | V  | F | D | K | Y | A | K | E | D | G | N | Y | C | A | S | L | C | K | E | E | L | R | Q | L | L | L | T | E | F | G | D | I | P |   |   |
| UniRef90_UPI0002C5680F |   | L | E  | G | I  | V | N  | V | F  | H | Q | Y | S | V | R | T | G | N | Y | C | A | S | L | C | K | E | E | L | R | Q | L | L | L | T | E | F | G | D | I | P |   |   |   |
| UniRef90_UPI000334053E | R | A | V  | L | C  | I | T  | E | A  | F | H | K | Y | A | R | E | D | K | A | L |   |   |   | T | C | K | E | E | L | R | Q | L | L | L | T | E | F | G | D | I | P |   |   |
| UniRef90_UPI0003F135B2 | A | T | D  | T | M  | I | R  | I | F  | H | K | Y | S | C | K | E | G | D | R | Y | K | L | N | K | G | E | E | L | K | Q | L | L | L | Q | E | R | E | L | T | E | F | L |   |
| UniRef90_H0WV55        | Q | A | L  | A | V  | M | V  | T | T  | F | H | K | Y | S | G | Q | E | G | D | K | F | K | L | N | K | G | E | E | L | K | Q | L | L | L | Q | E | R | E | L | T | E | F | L |
| UniRef90_UPI000331893B | S | I | L  | E | N  | I | N  | T | F  | H | Q | Y | S | T | R | L | K | H | P |   |   |   | D | T | L | N | Y | A | E | F | K | D | L | V | K | K | E | L | P | S | N | F | K |
| UniRef90_H0X3J2        |   | L | E  | G | I  | V | N  | I | F  | H | Q | Y | S | V | L | T | G | N | Y | D | T | L | S | K | G | E | E | L | K | Q | L | L | L | T | K | E | F | S | N | T | I |   |   |
| UniRef90_UPI0003331984 | R | D | I  | L | C  | I | E  | T | F  | H | K | Y | S | T | R | S | D | S | D | E | A | A | L | T | P | A | E | L | K | R | L | L | L | E | V | E | L | G | D | F | P |   |   |
| UniRef90_UPI00034FDDD0 | R | S | I  | F | D  | I | T  | E | I  | F | N | Q | Y | A | S | H | D | C | D | G | A | A | L | T | S | K | N | D | L | K | R | L | L | E | R | E | F | G | D | F | P |   |   |
| UniRef90_H0UWS1        | K | A | L  | D | T  | I | D  | I | Y  | H | K | Y | S | L | I | K | G | N | D | P | H | A | L | Y | K | D | D | L | K | K | L | L | L | T | N | E | C | P | Q | Y | T |   |   |
| UniRef90_D0VB94        |   | C | M  | E | K  | L | I  | L | F  | H | K | Y | A | D | E | D | G | D | K | K | H | L | S | S | K | K | E | F | K | K | L | V | E | T | E | T | E | L | P | T | F | Q |   |
| UniRef90_UPI0002C6504F | A | M | D  | S | L  | I | D  | V | Y  | H | K | Y | S | L | K | K | G | N | Y | H | S | L | V | Y | K | K | D | L | K | R | L | L | E | T | E | C | P | H | Y | T |   |   |   |
| UniRef90_UPI0000D9A7C8 |   | C | I  | K | S  | L | I  | A | V  | F | K | Y | A | G | K | D | G | Y | N | C |   |   | S | L | S | K | T | E | F | L | S | F | M | N | T | E | L | F | S | F | N |   |   |
| UniRef90_UPI0003C2AF54 | A | V | E  | M | L  | V | K  | N | F  | E | K | Y | A | G | G | G | C | C | C | R | I |   |   | S | S | K | K | D | F | R | K | M | L | L | T | R | E | L | N | H | M |   |   |
| UniRef90_UPI0003F0EED5 | Q | A | M  | A | A  | I | V  | L | T  | F | Q | R | Y | A | G | I | S | G | D | K | H | K | L | C | Q | K | A | E | L | K | E | L | L | E | K | E | M | A | S | W | T |   |   |
| UniRef90_L9KHS5        | A | M | G  | M | I  | D | V  | F | A  | R | Y | S | G | A | N | G | N | D | Q | S | L | T | K | A | Q | L | K | V | L | M | E | K | E | L | P | C | F | L |   |   |   |   |   |
| UniRef90_I3KUM9        |   | C | M  | E | G  | L | I  | K | V  | F | H | K | Y | A | K |   |   | N | G | S | L | T | R | Q | N | L | K | R | Q | L | M | E | A | E | L | S | S | F | Q |   |   |   |   |
| UniRef90_UPI00022352A8 | R | D | I  | E | T  | I | N  | V | F  | H | Q | Y | S | V | R | L | E | H | R | D | A | L | T | R | D | A | L | K | K | E | L | L | L | T | N | E | C | P | Q | Y | T |   |   |
| UniRef90_UPI0003870862 | A | I | E  | K | I  | V | T  | I | F  | F | T | Y | A | G | K | E | G | K | K | G | T | L | T | V | N | E | F | K | E | L | V | Q | L | Q | L | P | N | L | M |   |   |   |   |
| UniRef90_UPI00032B1167 | R | D | V  | L | C  | I | E  | T | F  | H | K | Y | A | R | E | D | G | D | R | A | T | L | T | H | G | E | L | K | Q | L | L | Q | S | E | F | G | D | F | L |   |   |   |   |
| UniRef90_UPI00044238F1 | S | V | C  | T | I  | G | V  | F | H  | K | Y | A | E | R | R | N | A | C | S | T | M | K | R | R | E | M | K | R | L | L | I | Q | K | E | F | G | E | I | P |   |   |   |   |
| UniRef90_UPI00022AFD09 | A | I | N  | A | L  | V | S  | G | F  | K | A | Y | A | G | R | D | G | S | S | D | T | L | S | R | D | E | F | Y | R | L | V | S | S | E | L | P | N | F | I |   |   |   |   |
| UniRef90_UPI00046BE274 | S | V | D  | T | I  | I | N  | I | F  | H | Q | Y | S | V | R | L | G | H | P | D | R | L | T | N | Q | K | E | F | S | Q | M | V | K | K | E | L | P | T | F | R |   |   |   |
| UniRef90_UPI000441F275 | A | L | E  | K | I  | V | C  | T | F  | F | T | Y | A | A | Q | E | G | K | G | T | L | L | N | T | G | E | F | K | E | L | V | T | L | Q | L | Q | L | P | N | L | M |   |   |
| UniRef90_UPI0004432864 | S | M | A  | T | I  | M | D  | I | F  | Y | T | Y | C | G | K | D | E | E | C | D | T | M | N | Q | S | E | L | K | E | F | L | E | K | E | L | Q | F | I | P |   |   |   |   |
| UniRef90_UPI0003C26920 | K | A | I  | E | K  | I | D  | I | F  | H | Q | Y | S | V | R | V | G | H | F | D | T | L | T | N | K | M | E | M | K | L | L | I | D | K | Q | L | P | N | Y | M |   |   |   |
| UniRef90_I3MVD9        | S | I | E  | T | V  | I | N  | V | F  | H | Q | Y | A | V | R | L | G | N | R | D | T | L | T | N | Q | K | E | F | I | Q | M | V |   |   |   |   |   |   |   |   |   |   |   |
| UniRef90_K9N2S0        | Q | A | M  | E | T  | L | M  | F | T  | F | H | K | Y | C |   |   |   | G | D | K | N | Y | M | S | K | D | D | L | H | K | M | M | E | S | E | F | P | E | F | Q |   |   |   |
| UniRef90_UPI00015554B2 | K | S | V  | T | D  | V | M  | E | V  | F | K | K | Y | A | Q | E | D | G | G | A | V | L | T | K | K | E | E | F | L | R | Q | L | L | L | R | S | S | E | L | G | D | I | L |
| UniRef90_A5WW28        | A | I | N  | V | L  | V | S  | E | F  | K | A | Y | A | G | K | E | G | S | A | S | T | L | S | K | E | E | F | T | S | L | V | K | S | S | E | L | P | N | F | V |   |   |   |
| UniRef90_UPI0003EBC452 | K | A | L  | T | T  | M | V  | T | T  | F | H | K | Y | S | G | R | E | G | S | K | L | T | L | S | R | R | E | L | K | E | L | I | K | K | E | L | C | L | G | E |   |   |   |
| UniRef90_UPI0003C8FE11 | S | I | L  | S | V  | I | N  | I | F  | H | Q | Y | S | A | K | E | N | G | D | C | T | S | L | S | K | K | E | L | K | N | L | L | L | A | E | F | G | D | I | P |   |   |   |
| UniRef90_UPI00032B0E8E |   | L | E  | G | I  | N | I  | F | H  | Q | Y | S | V | R | T | G | H | F | D | T | L | T | K | C | E | L | K | K | L | L | T | T | E | L | A | N | T | I |   |   |   |   |   |
| UniRef90_F1SFV6        | Q | G | L  | A | A  | V | L  | C | T  | F | Q | E | Y | S | G | R | C | G | D | K | H | K | L | C | Q | A | E | L | K | E | L | L | Q | K | E | L | P | T | W | T |   |   |   |
| UniRef90_UPI000329334A | R | A | I  | E | T  | L | I  | K | N  | F | H | Q | Y | S | V | E | G | G | K | E | T | L | T | A | S | E | L | Q | D | L | V | T | Q | Q | L | P | H | I | M |   |   |   |   |
| UniRef90_G3WVZ0        | K | S | L  | I | D  | I | E  | V | Y  | Q | Q | Y | V | Q | S | D | C | G | G | T | A | L | S | K | K | A | E | L | K | N | L | L | Q | K | E | F | G | D | I | P |   |   |   |
| UniRef90_UPI00038C51B2 | Q | A | M  | E | T  | I | V  | K | T  | F | H | Q | H | S | G | K | K | G | D | P | D | T | L | S | R | D | E | F | K | Q | L | V | K | E | D | M | S | N | I | K |   |   |   |
| UniRef90_H9G3V8        | H | A | M  | E | T  | V | M  | L | T  | F | H | K | F | A |   |   |   | G | D | K | N | Y | L | T | K | K | D | D | L | K | R | L | M | E | K | E | V | P | G | Y | M |   |   |
| UniRef90_UPI00038C59F1 | R | S | V  | I | D  | I | A  | E | V  | F | D | H | Y | A | T | H | S | C | E | G | A | S | L | S | K | K | D | L | K | N | L | L | E | K | E | R | E | L | G | D | V | P |   |
| UniRef90_UPI000444474F | K | A | I  | N | N  | I | D  | I | F  | H | K | Y | S | L | K | T | G | N | Y | H | S | L | Y | R | N | D | L | K | S | L | M | E | S | E | C | S | M | Y | L |   |   |   |   |
| UniRef90_UPI0000F3357A | Q | A | L  | A | V  | M | V  | A | T  | F | H | K | Y | S | G | Q | E | G | D | K | F | K | L | C | Q | A | N | K | F | K | E | L | E | K | E | L | P | T | W | A |   |   |   |
| UniRef90_UPI0003F0E3B1 | H | A | M  | E | T  | M | M  | F | T  | F | H | K | F | A |   |   |   | G | D | K | C | C | L | T | K | D | N | L | K | V | L | I | G | K | E | F | P | T | F | Q |   |   |   |
| UniRef90_UPI00046B48EB | K | S | L  | N | S  | V | I  | D | I  | Y | H | K | Y | S | L | I | K | G | N | Y | H | A | I | Y | K | D | D | L | K | K | L | L | E | T | E | C | P | Q | Y | T |   |   |   |
| UniRef90_UPI00042CA2EC | R | S | L  | F | N  | I | T  | K | I  | F | N | Q | Y | A | S | H | D | C | D | G | T | L | S | K | K | D | L | K | N | L | L | E | R | E | F | G | D | I | P |   |   |   |   |
| UniRef90_UPI0003C8DBD8 | K | S | P  | E | E  | L | K  | S | I  | F | E | K | Y | T | A | K | E | G | D | L | D | Q | L | S | S | K | D | E | L | K | L | L | I | Q | N | E | I | P | S | L | L |   |   |
| UniRef90_Q8AYJ2        | A | M | A  | G | I  | G | V  | F | R  | K | Y | S | C | R | K | E | G | D | R | N | T | L | S | N | N | E | M | V | D | L | K | A | E | L | P | N | F | Q |   |   |   |   |   |
| UniRef90_UPI000441DFE5 | Q | A | L  | G | E  | V | V  | C | T  | F | Q | R | Y | S | C | R | K | E | G | D | R | N | T | L | S | K | A | E | L | R | S | L | L | Q | N | E | L | P | N | L | Q |   |   |
| UniRef90_W5NQJ0        |   | L | E  | G | I  | N | I  | F | H  | Q | Y | S | I | R | L | G | H | Y | D | T | L | V | K | C | E | L | K | Q | L | L | I | T | K | E | L | P | N | C | T |   |   |   |   |
| UniRef90_F7F7W3        | R | D | V  | L | C  | V | I  | E | T  | F | H | K | Y | A | S | E | D | S | N | Q | T | T | L | T | G | R | E | L | K | Q | L | L | Q | G | E | F | G | D | F | L |   |   |   |
| UniRef90_F7E4R3        | A | L | C  | S | I  | I | E  | T | F  | H | K | Y | S | S | R | E | G | D | K | N | T | L | N | K | G | E | L | K | E | L | L | E | N | E | L | G | D | L | G | D |   |   |   |
| UniRef90_UPI00046B1682 | R | D | V  | L | C  | V | I  | E | T  | F | H | K | Y | A | S | R | E | G | D | S | D | E | V | T | L | H | R | E | L | K | Q | L | L | H | N | E | F | G | D | F | L |   |   |
| UniRef90_W5MVL0        | A | M | A  | M | I  | M | Q  | V | F  | D | K | Y | A | S | T | D | G | K | K | Q | T | L | T | K | A | E | L | K | T | M | M | E | K | E | L | P | A | F | A |   |   |   |   |
| UniRef90_UPI00018B966E |   | M | E  | G | L  | I | N  | I | F  | H | Q | Y | S | V | R | G | G | H | Y | D |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |



|                        |               | 50              | 60                | 70                              |
|------------------------|---------------|-----------------|-------------------|---------------------------------|
| UniRef90_F7IHR9        | K N K A T V   | D K T F Q D L   | D A N Q D N Q V   | N F Q E F I S L L A             |
| UniRef90_UPI00046B5891 | N D P E T V   | E N I L N L L   | D R D R D G G V   | N D F H E F Y L L L V F Q L V Q |
| UniRef90_UPI0002C5680F | Q N Q A T I   | D K I L F Q E L | D A D D G E V     | T F K E F V L L L V S L V       |
| UniRef90_UPI000334053E | Q P H A V I   | E R H L N L L   | E I D N D I T I   | S F D E F V L L A I F S L       |
| UniRef90_UPI0003F135B2 | S C P S L V   | D K I M Q D L   | D A H K D D E V   | S F D N E F V V M L A G         |
| UniRef90_H0WV55        | V D E E G L   | K K I L M S D L | D E N S D Q Q M   | D F Q E F Y A V F L A           |
| UniRef90_UPI000331893B | R D E A A L   | K D I M S D L   | D T N S A D K Q L | S F E E F T M L V A K L         |
| UniRef90_H0X3J2        | Q N K G G I   | D K I F E G L   | D A N R D Q Q V   | S F V I E F M T L V A N L L     |
| UniRef90_UPI0003331984 | H V F H A V   | E R K L N L L   | D I D R N G T I   | S F S E E F I L L T I F S L     |
| UniRef90_UPI00034FDDD0 | H D P E T V   | E T V L L L L   | D R D T N G H V   | S F S E F L L F V F K V A Q     |
| UniRef90_H0UWS1        | K K R N A D   | A W F R Q L     | D I N E D G A V   | N F Q E F L V F V V K V A       |
| UniRef90_D0VB94        | K N P K A V   | E C I M K D L   | D T N K D D K L   | S F E E F L P L V A G L S M     |
| UniRef90_UPI0002C6504F | K E K D A D   | T W F N E L     | D V N R D G A I   | N F E E F L L L V I K V         |
| UniRef90_UPI0000D9A7C8 | H K D P S V   | L D R M K K L   | D V N S D G Q L   | D V P E F L N L I G G L A S     |
| UniRef90_UPI0003C2AF54 | G N K R A A   | D K L L C D L   | D E N K D D G R I | S F E E Y W T L I G G I A S     |
| UniRef90_UPI0003F0EED5 | P R E C D Y   | N K L M S V L   | D T N K D C E V   | D F I E Y V R S L A C L C       |
| UniRef90_L9KHS5        | Q E T D A V   | D K L L K D L   | D T N G D A K V   | D F N E F I V F V A A L T S     |
| UniRef90_I3KUM9        | K D P A A V   | D K I M K D L   | D A N G D G L V   | N F E E F V S L V V G L S       |
| UniRef90_UPI00022352A8 | K R E A V I   | N D I M E D L   | D T N E D K E L   | S F E E Y I V L V A K L T       |
| UniRef90_UPI0003870862 | K D V P S L   | E E K M S E L   | D V N N D E E L   | K F G E Y W R L I G E L A K     |
| UniRef90_UPI00032B1167 | Q P R H A V   | Q R K L N L L   | G V D S A S T I   | H F D E F V L L A I F N L       |
| UniRef90_UPI00044238F1 | R D P Q L V   | K L T F Q L L   | D V N R D S L V   | D F N E F L L L I F E V A       |
| UniRef90_UPI00022AFD09 | D D P A A I   | D Q L M S S L   | D K N N D G E L   | N F L I E F W Q L I G Q L A S   |
| UniRef90_UPI00046BE274 | R N E A L I   | K D M M E D L   | D T N G D K D L   | S F E E F I T L V G R L T       |
| UniRef90_UPI000441F275 | K N V G D L   | D E K M R A L   | D V N N D E E L   | K F G E Y W R L I G E L A K     |
| UniRef90_UPI0004432864 | D D P E T I   | D I M M L N M   | D L D H N K K I   | D F P E F L L L V F K L I M     |
| UniRef90_UPI0003C26920 | K N P G E I   | D A L F K D L   | D K N K D Q Q L   | S F G E F M G L I S K V T       |
| UniRef90_I3MVD9        | K K E G K I   | N H I L E D L   | D T N V D K Q L   | S F E E F V M L I A K L         |
| UniRef90_K9N2S0        | N D P R A V   | D K I M K D L   | D Q C R D G R V   | T F H S F F S L I A G L T       |
| UniRef90_UPI00015554B2 | Q R S R Y V   | G S E V D L L   | D A N H D G V I   | D F N E F I L L V F G L         |
| UniRef90_A5WW28        | K N P A T I   | D H L M S S L   | D A N N D G Q L   | T F M E F W N L I G N V A N     |
| UniRef90_UPI0003EBC452 | K L Q S E A   | G T L M A D L   | A Q N E D Q V V   | S F Q E H V T F L G A L A       |
| UniRef90_UPI0003C8FE11 | N D P E T V   | E T I L S L L   | D R D R N G C V   | D F H E Y L L L V F Q L V Q     |
| UniRef90_UPI00032B0E8E | Q N T K A V   | D Q L F R D L   | D E D R D G Q V   | D F N E F L S L V S S V         |
| UniRef90_F1SFV6        | P R E C D Y   | N K F M S V L   | D S D K D G E V   | D F V I E Y V R S L A C L C     |
| UniRef90_UPI000329334A | P S N C G L   | E K I A N L G N | C N D S K L       | E F G S F W E L I G E A A R     |
| UniRef90_G3WVZ0        | H D P E T V   | D L V L Q L L   | D R D C N G F V   | D F G S F L L L L F K I A Q     |
| UniRef90_UPI00038C51B2 | K D E K A M N | H M M E D F     | D K N K N G Y I   | D F D E F V A L L A K I         |
| UniRef90_H9G3V8        | E N P M A I   | D R I M K N L   | E E C R D G K I   | T F F E G Y L S L F A G L T N   |
| UniRef90_UPI00038C59F1 | H D P E T V   | D V I L L E L   | D R D S N G R V   | D F N E F L L L F L F K L A Q   |
| UniRef90_UPI000444474F | K E K N A D   | T W F T E L     | D I N S D Q A I   | N F E E F L I L L V I K I A     |
| UniRef90_UPI0000F3357A | P R E C D Y   | K Q F I S V L   | D T N K D C Q V   | D F V I E Y M R L L A C L C     |
| UniRef90_UPI0003F0E3B1 | K D P L A V   | D K I M K D L   | D H C R D G K V   | G F Q S F F S L M A G L T       |
| UniRef90_UPI00046B48EB | K R K D A E   | S W F K D L     | D V N T D G A I   | N F Q E F L I F V V K I         |
| UniRef90_UPI00042CA2EC | H D P E T V   | D L V L L E L   | D R D R D G L I   | D F H E F L A I V F K V A       |
| UniRef90_UPI0003C8DBD8 | K E P S S L   | D D L F K E L   | D K N G D G E I   | S F E E F Q V F V               |
| UniRef90_Q8AYJ2        | K D K A A V   | D K I M K D L   | D R N K D G E L   | D F Q E F V V L I               |
| UniRef90_UPI000441DFE5 | T L Q R A F   | E M L T L L     | D T D Q D G E V   | N F E E Y I R F V A A           |
| UniRef90_W5NQJ0        | K D Q P S I   | D E I F Q D L   | D T D K D K E V   | S F E E F V V L V               |
| UniRef90_F7F7W3        | Q P C H A V   | E K N W N L L   | T I D S N Y T I   | S F D E F V L V I F N L         |
| UniRef90_F7E4R3        | K I E D E I   | V E L M N S L   | D Q N K H E E V   | N F Q E F I S F L G T V A       |
| UniRef90_UPI00046B1682 | Q P Y R A M   | E R N L N L L   | D N D S N G T I   | S F V I E F V L A I F N L       |
| UniRef90_W5MVL0        | K N Q D E A   | D K L M K A L   | D H N G D S K V   | D F N E F V I L V A A L T       |
| UniRef90_UPI00018B966E | R D Q A T V   | D R I F Q G L   | D T D R N Q Q V   | D F P E F V A L I A S M         |
| UniRef90_M3XCC2        | K V Q D T I   | A K L M D D L   | D W N K D Q V V   | N F Q D Y V T L I F             |
| UniRef90_H0WH36        | K K K D A N   | T L F K E L     | D I N S D G A I   | N F Q E F L V L M I K V         |
| UniRef90_D3ZDM0        | R Q P Y Y I   | T E L F R A A   | D K N K D N Q I   | C F D E F L Y I L G K L V K     |
| UniRef90_UPI00027F9301 | E N P L A M   | D K I M K D L   | H Q Y R D G K V   | G F Q S F S L I A G L A         |
| UniRef90_W5QIV3        | Q P C H A V   | E S N L N L L   | N I D S N G A I   | S F D E F V L A I F S           |
| UniRef90_UPI00020F60CD | R V K T E V   | K X L V Q E V   | D E N G D Q E V   | D F Q E Y S V E L A L V C M     |
| UniRef90_UPI000441C1FD | K N P D A I   | D C I F K E L   | D Q D Q D A Q V   | S F Q E F L L L I S R V         |
| UniRef90_H9GT13        | V N P L V V   | E E M F K Q L   | D Q D Q D K E L   | S F Q E F M Q L V V Q V T       |
| UniRef90_UPI0003F0B99A | H D P E T V   | D T V L Q I L   | D R D R D G L I   | N F N E F L L L T F R I A       |
| UniRef90_F1ST31        | Q P P H A I   | D R D L N L Q D | I D S N D T I     | S F D E F V L A I F S L         |
| UniRef90_Q4RL96        | K D P R A M   | E L M G S L     | D K N N D G E L   | T F A E F W Q L I G N L A S     |
| UniRef90_UPI0003F0A828 | K K K S A D   | A W F N E L     | D I N S D R A I   | N F Q E F L I F V V K M         |
| UniRef90_G3U1S6        | N D P S A D   | D F M R L L     | D L D H N K K V   | D F T E F F L M V F K L A Q     |
| UniRef90_UPI000383E213 | N N S E T T   | G K I L Q L     | D Q D G D Q T I   | D F S E F I L L M F A V T       |
| UniRef90_UPI00034F6A03 | K K K T A T   | T W F K Q L     | D I N E D G A I   | N F Q E F L P L V I K V S       |
| UniRef90_I3IZ81        | K D K K A V   | D L V K A L     | D F D G D G V V   | D F E E F M A V V A A L T       |
| UniRef90_UPI0002C32E79 | M K E S S I   | D L M K S L     | D K N S D Q E I   | D F K D                         |
| UniRef90_UPI000273E00D | K D P L A A   | D I T M K D V   | D C Q K D S T L   | N F Q N L F S L T A G L T       |
| UniRef90_UPI00045DC07E | K E P Y Y I   | S E L F R A A   | D K N K D N Q I   | C F E E F L H V L G K L         |
| UniRef90_M7AYK5        | T E E A S F   | Q R F M N N L   | D S N W D G E V   | A F Q E Y T T F L G C I         |
| UniRef90_UPI0003EAC73C | F D P A D I   | E E V M A K L   | D K N H D G E V   | N F H E F C K F V G M L A Q     |
| UniRef90_S9XE92        | K K K N T     | D T W F K E L   | D I N E D G A V   | N F E E F L I L V I K V         |
| UniRef90_L8Y2U4        | Q P H H A V   | E K N L N L L   | D I D N Y D T I   | S F D E F I L G I F N L         |
| UniRef90_F6SK92        | K K K K T V   | P E F M K E L   | D I N K D G F I   | N F E E F L I L T L K M         |
| UniRef90_H0XK75        | Q E P N Y I   | T E L F W A A   | D K N K D N Q I   | Y F D E F L Y I L G K L V K     |
| UniRef90_UPI0003C90C57 | R R P L A V   | D K I M K D L   | D N C R D S K V   | G F Q S F V S L T V S L T       |
| UniRef90_B9ELB9        | K D Q A T M   | D S L M E S L   | D T D G D S E L   | D F Q E F M T F I T M V T       |
| UniRef90_UPI000393FB80 | K D K K A V   | D D L V K A L   | D F D G D G V V   | D F E E F M A V V A A L T       |
| UniRef90_UPI0000F2C3AE | H D P Q T V   | D T I L Q L L   | D R D H D E H I   | D F N E F L L L V F K L A Q     |
| UniRef90_C1BK6K        | K N P A V I   | E Q L M S S L   | D Q N D D G E L   | T F L I E F W Q L V G R L A N   |
| UniRef90_H2T287        | N N P K L V   | D W M M K D L   | D L N K D D K L   | D F E E F L P L I V G L S       |
| UniRef90_UPI00018B3733 | K D A G S L   | D D K M K S L   | D V N Q D A E V   | E F N E Y W K L I G E L A R     |
| UniRef90_G1PAG3        | D K E D A M   | E K V F K G L   | D Q N G D A T V   | S F Q E F L L L T V E L T       |
| UniRef90_UPI0003338B6B | E N Q K A V   | D K V M K D L   | D Q C R D V E V   | G F W S F F S L I A D L T       |
| UniRef90_J3QPE5        | K D Q K A M   | K Y M M E D F   | D T N E D A T L   | S F D E F V E L I R K V         |
| UniRef90_G3TZS9        | R I K D A N   | A W F K E L     | D V N S D S A I   | N F E E F L L L V V K M         |
| UniRef90_UPI0002C46522 | F R E C D Y   | N K F M S V L   | D T N K D C E V   | D F A E Y V                     |
| UniRef90_F7G052        | K P F D I L   | T T S L H F L   | D R D G D G S I   | S F D E F I L L I F D L         |

|                        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UniRef90_UPI000440088A | R | N | I | N | G | S | I | E | A | F | R | R | X | A | R | M | E | G | D | C | A | V | L | S | R | G | E | R | E | R | L | L | E | R | E | F | A | D | V | P |   |   |
| UniRef90_P27005        | K | A | L | D | S | N | L | D | V | I | F | H | N | F | S | R | N | Q | G | N | H | A | L | T | S | K | N | D | F | K | K | M | V | T | E | F | C | P | Q | F | V |   |
| UniRef90_UPI000328D09E | H | A | M | D | T | M | M | F | T | F | H | R | F | V | R |   |   |   |   | G | N | K | G | Y | L | T | K | N | D | L | R | I | L | M | E | K | A | F | Q | G | F | V |
| UniRef90_UPI00042C6269 | Q | A | V | A | A | L | V | C | T | F | X | E | Y | S | G | P | C | G | A | D | K | X | K | L | C | Q | A | E | L | K | E | M | L | E | K | E | L | P | T | W | T |   |
| UniRef90_UPI0003C47112 | K | A | V | V | V | L | V | E | N | F | Y | K | Y | S | G | P | C | G | A | K | N | K | L | S | K | D | S | F | K | E | M | L | Q | Q | E | F | N | H | M | L |   |   |
| UniRef90_UPI00001E33C4 | R | C | I | E | S | P | I | A | V | F | Y | K | Y | C | S | R | K | E | E | K | S | Y | Q | L | S | K | T | E | S | L | S | F | M | N | I | E | E | M | N | K | Q |   |
| UniRef90_UPI0003C2AB10 | S | I | G | T | I | N | V | F | Y | Q | Y | S | V | T | E | D | R | E | G | S | S | L | S | R | S | R | Q | M | R | L | F | I | S | Q | K | E | F | A | D | V | L |   |
| UniRef90_U3IR63        | A | I | Q | T | L | V | N | I | F | Y | K | Y | S | S | R | C | C | C | R | K | R | I | S | S | K | K | D | F | R | R | M | L | S | C | E | L | N | H | M | L |   |   |
| UniRef90_UPI0003C126F2 | K | A | I | N | T | I | V | K | I | F | Y | K | Y | S | T | K | K | E | G | H | Y | N | L | D | K | K | E | L | K | N | L | S | T | M | E | L | S | H | L | M |   |   |
| UniRef90_H9H249        | K | A | L | E | S | I | V | N | I | F | H | Q | Y | S | I | R | E | G | Q | L | D | L | L | N | F | N | D | F | Q | T | M | L | T | R | E | E | Q | A | P | N | F | R |
| UniRef90_UPI000441B00F | A | L | I | G | R | M | V | E | T | F | Y | K | Y | S | A | K | E | G | D | R | Y | K | L | N | S | K | K | E | M | K | E | L | L | Q | Q | E | F | V | D | A | M |   |
| UniRef90_UPI000392EB46 | I | N | G | I | V | A | A | F | Y | V | C | A | R | S | N | G | D | C | G | A | L | L | N | S | R | E | E | F | L | R | Q | L | I | L | Q | Q | E | F | V | D | A | M |
| UniRef90_H2N5S9        | I | F | A | I | I | N | L | F | K | Y | F | K | Y | S | K | K | D | K | N | T | D | T | L | L | E | K | E | F | R | Q | I | L | L | K | N |   |   |   |   | P |   |   |
| UniRef90_UPI00034FCE13 | Q | G | I | V | T | V | V | D | V | F | Y | Q | Y | A | T | Q | H | G | E | C | D | M | L | L | E | N | E | F | R | Q | I | L | L | K | N |   |   |   |   | P |   |   |
| UniRef90_W5MJV2        |   |   |   |   |   |   |   | D | V | F | Y | K | Y | A | G | E | D | D | K | K | Q | T | L | S | R | D | E | L | K | K | L | L | Q | A | H | C | S | H | K | F |   |   |
| UniRef90_UPI0003F07F66 | A | A | E | T | M | V | T | T | T | S | T | F | S | V | Q | K | C | K | G | K | T | L | S | L | N | E | F | K | E | L | V | T | E | Q | L | P | L | L | L |   |   |   |
| UniRef90_UPI000395D9B7 | K | S | L | Q | T | V | M | D | V | F | H | Q | Y | S | I | R | Q | G | E | I | D | L | L | S | M | S | D | F | T | T | L | K | E | Q | A | P | S | F | R |   |   |   |
| UniRef90_J3S530        | A | I | Q | T | L | V | K | N | Y | E | K | Y | S | G | K | G | C | C | C | R | R | I | S | S | K | S | D | F | R | K | M | L | S | H | E | L | N | H | M |   |   |   |

UniRef90\_UPI000440088A H D P A T V D E V L H P L D E D D T G T V E F K E F L V L V F K V A Q  
UniRef90\_P27005 Q N I N I E N L F R E L D I N S D N A I N F E E F L A M V I K V  
UniRef90\_UPI000328D09E K D P L A V D N I L M K D L D Q R R Y G K V S F Q S C F L L I A G L T  
UniRef90\_UPI00042C6269 P R E C D H N K F M S V L D S N E D C K V D F V I E Y  
UniRef90\_UPI0003C47112 T N T G A A D K L I Q D L D A N Q D G C V S F D E Y W T L I G G I A S  
UniRef90\_UPI00001E33C4 K D P G A L D Q M M K K L N L N R D W Q L D F Q E F L N L I D G L A  
UniRef90\_UPI0003C2AB10 V V I S V N T V L R L L D Q D G S I D F P E F L L I L S F R V A Q  
UniRef90\_U31R63 T D T G A A D K L I C D L D E N K D G R I S F E E Y W T L I G G I A S  
UniRef90\_UPI0003C126F2 P I K R S M K K I L A Q W D R D Q D Q Y I D L Q E F L S M I T N L  
UniRef90\_H9H249 S R P G Y L Q K L F E E T D L N K D K E L T F E E F T I V L A K V T  
UniRef90\_UPI000441B00F I D E R G F E L L M K K L D D N G D E E L D F Q E Y A V F L A  
UniRef90\_UPI000392EB46 E N P Q T V K K V L H F L E D G S N R R V D F S E L L S L V F R M A K  
UniRef90\_H2N5S9 D D P D T V D I F M D H L D I D H N K K I D F T E F L L M V F K L A Q  
UniRef90\_UPI00034FCE13 D D P D T V D I L M Q N L D R D H N K Q V D F I E Y L L M I F K L F Q  
UniRef90\_W5MJV2 D S V T K L D K L V K R L D D N K D N Q I D I V E F G A L I G M M A N  
UniRef90\_UPI0003F07F66 K D A G S L D E K M K S L D V N Q D S E L K F N E H Q R P I G E L A K  
UniRef90\_UPI000395D9B7 N R A G Y L E R L F Q E T D L N K D K E L S F E E F T I V L S K L A  
UniRef90\_J3S530 K N R Q A A D K L L C D L D E N Q D G E I N F D E Y W N L I G G I A S  
UniRef90\_UPI0004543E5D K n P D D A D V F M E M L D V N H N E K I D F T E Y L L M V L K L A K  
UniRef90\_F6S011 K D P G V L D R M M K K L D L N C D  
UniRef90\_G3W1A3 N D P E F I T N T F R S V D K N K D K Q V D F G E F V N L L  
UniRef90\_K9N182 K H P Q F L N D I F K I T D R D G D N K I N F E E F M T L M T C M T  
UniRef90\_UPI0002C5866E D D P D T A D V F M H I L D L D H D K K I D F S E F F L M V F K L A Q  
UniRef90\_UPI0003C49BB4 K T G Y V V  
UniRef90\_UPI00032897DB T D T G A A D K L I R D L D T S H D G C I S F D K Y W T L I G G I T S  
UniRef90\_L7N118 D S K K A V N N M G Q E L D A N K D G K V G F E E Y M K L V G Y L A  
UniRef90\_UPI000298ED3F K C V G P L E E K I E C M G D P N E A K L E F G E Y W D M M G D A A K  
UniRef90\_U3KBZ8 Q P H A V Q R N L N L G I D S A D T I S F D E F V L V I F N L  
UniRef90\_G1TLH6 T D A E A V T K M R Q D L D E N K D G K I S F Q E Y M I L V G E L A Q  
UniRef90\_W5LL12 Q D K K E V E A M L M E L M S Q G D Q E V D F C Q F M C Q V A T L T  
UniRef90\_H3DR68  
UniRef90\_F716R9 K N K D V L K Q M M K G M D K K P D D K I L D F Q E F L N L I G G M  
UniRef90\_Q61803 D D P D T V E V F M D H L D I D N S D Q Q V G L K E I A V F L A L L T  
UniRef90\_H9H5S8 V D E E G P K K L T G E L D I N S D Q Q V G L K E I A V F L A L L T  
UniRef90\_UPI000334159B E I K E A V K G M F D M L D A N K D Q K I S F D E Y W Q L I T W I C Q  
UniRef90\_UPI0003C28778 E D E E G L E K L M G D L D E N S D X A L F L A L I A M M C N  
UniRef90\_UPI00022F48FA K N Q K D L R K I L M K G V D G K Q D G E L D F Q E F L N L I G G M  
UniRef90\_C1C409 K L Q D A L A K L M D D L D R N K G K V V S F Q E Y V T F L G A F T  
UniRef90\_UPI0002C54EC0 P M E C D Y S A F M S V L D T N K D C K V D F V I E Y V R S L A C L C  
UniRef90\_UPI000298950D I S A G D I E E A M E M L D K N H D G E V N F R E F C R C V S D L A K  
UniRef90\_UPI0003B394AA H D P E T V D V M L E L L D R D S D G Q V E F D E F I L L I S K L A Q  
UniRef90\_UPI00032ADA2E K N R D A L N K I Y K E A N V D G D K K L C K E F V M V L S R I S  
UniRef90\_F6RMH6 Q L C H A V E R N L N L E A I D G N A A I S F G E F A L A F F N L  
UniRef90\_UPI0002742221 K R N M A V D K Y S Q L D K N R D G R L R F T E F L T T L S G V  
UniRef90\_UPI000399195F K D P L V M D K S M K D L Q C Q D G K V N F Q S C F S L I T R L T  
UniRef90\_F7A2F5 Q N C G Y L R D L F K E T D L N K D R Q L T F E E F T I V L A K L T  
UniRef90\_R7VNR2 K D Q E T L D K L M E G L D A D G D T E C D F Q E F V V F I A M V A  
UniRef90\_K4FT76 K F M E S P D A L F F K K A N L D K N E S L E F H E F M L V I S M I A  
UniRef90\_UPI0000F2BD90 G H  
UniRef90\_Q5RHS7 G K Q C D D I I D Q L D T D G D G E M N F A E F M S F L G R L Y Q  
UniRef90\_H2YXP5 H N T T S I D D H I N S L D S N H D G R L K F T E F L T T L  
UniRef90\_UPI0003834458 F S K E A V A E M M K E G D S N D G C I D F D E F M R M M  
UniRef90\_V4ZJF5 K D P G V L D R M M K K L D L N C D G Q L D F Q E F L N L I G G I A Q  
UniRef90\_UPI0003C44047 T G T D A V K E M R K G L D E N K D G K V S F Q E Y M T L I G Y V A N  
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UniRef90\_G1QFE2 S A C D Y L T S V F E R K D K N E D K K I D F S E F L S L L G D I A  
UniRef90\_UPI00045DD9B0 N H R E I D E I L R D V D L N G D G Q V D F E E F V R M M S R  
UniRef90\_UPI0002990206 V D D E K V K K E M N N L D K D S D Q Q V D F R M Y A L V L  
UniRef90\_J3QMC7 D E A T I D E V I Q R L D D N D G K I N Y Q E F V A M M R K  
UniRef90\_V7CTL0 P N E V E L E V I I Q R L D M D G D G Q V D F E E F V T L L G  
UniRef90\_UPI00029DD07F I C A V D F D K A M K R M D K N R D G E I D F K E F L K C M S S M A K  
UniRef90\_UPI0002A4C472 K N P N D Q D V F M Q M L D V D H D D K I D F T E Y L L M V L K L A Q  
UniRef90\_Q8CIU0 K G V E P L E E K I E C L G D N E A K L D F T G E Y W D I M G D A A K  
UniRef90\_UPI0004419CA5 K D P L A R D K I R Q D L D Q C Q D G K M G F Q T F L L L I D G L T  
UniRef90\_UPI0003F1867B K D P S V L D C M M K K L D I N  
UniRef90\_L5JS91  
UniRef90\_R0K9V9 E S S K N V Q K I I D D L D K N R D G K V D F E E F V S V A T K L I M  
UniRef90\_G1FKP1 K G K D Y L G N A F E K A D E D K D G K I D F S E L L S V L G G I A S  
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UniRef90\_UPI0003F10C97 G D P Q A I Q E L I R E V D T D N D G K I D Y D E F V A M M R K  
UniRef90\_A7X9N2 G N S A V K E M Q R G L D E N S D G K V S F E E Y L T L I G Y L A N  
UniRef90\_UPI00022AFD08 V G R A T I D A L L T E V D L N G D G E I D F D E F M Y M M R K  
UniRef90\_F0VAY9 E K P Y F V T E L F R A A D K D N Q I C D F E F L Y V L G Q L  
UniRef90\_L5MEZ6 P T P Q E L D A V M F E L D S N G D A V D F P E F L T  
UniRef90\_A8J2K6 S L D E E V E K I L D E V D K N G D G Q I D Y D E F V A L M T G Q A  
UniRef90\_E1Z810 G D E A T I D E L L E D V D T D K D G R I N Y E E F V A M M R K  
UniRef90\_V4SL58 P Q T T T D N Y I K Q L D A N H D G R L K F T E F L T T L S L V A  
UniRef90\_UPI0003957E1A N S S A V K E M Q Q G L D E N N D G K V S F Q E Y L T L I G Y V A N  
UniRef90\_UPI000298D037 E A A I D E V F N D V D S D K D G K I D Y H E F M T M M  
UniRef90\_K7MP34 A G P E L D E M L Q E V D L N G D G T V D F D E F V M M L F S  
UniRef90\_UPI0003318215 Q G Q E S Y Q E I I S A L D E D K D N K I D F D E F M I L L L S L A  
UniRef90\_M7BD81 S V S Q A  
UniRef90\_UPI00045E3057 D P E T L E R L F R D L D T N G D L Q I D F Q E Y A T L V A M L T  
UniRef90\_M7AZM1 K S P D F L E K F F Q K Q D V N H D E K I R F P E F L S S V A T V A M  
UniRef90\_UPI00038C157C E D D T A L D R I I E A I D V N G D G Q L G F E E F M N L M F A  
UniRef90\_UPI00006CA823 T E P G K L D E I F D Q M D T D N D G R V S F D E F K N A I  
UniRef90\_E8ZA60 P T E K E L V Q M I S S V D D N G D N E I D F E E F L I L M  
UniRef90\_K0SI49

[illegible]



|                        | 50  | 60 | 70 |
|------------------------|---|----|----|
| UniRef90_U5GKD0        | G D D A T I I N E V I E D V D T D K D G K I N Y E E F A S M M R K G T Q   |    |    |
| UniRef90_UPI00042AFD20 | G D E A T I D E V I E D V D I D K D G R I N Y E E D F V A M M R R G T Q   |    |    |
| UniRef90_UPI0003834604 | Q G Q E K Y Q E I I S A L D E E P D N K N G I D F E D F M I L L V S L T   |    |    |
| UniRef90_E2GMV6        | K L Q D A I A R L M D D L D R N K Q D Q E V L N F S Q E Y V A F L G       |    |    |
| UniRef90_K9IQ70        | E N L A V D K I M K D L N Q C Q D G R V L G S R T F F F L L I A G L       |    |    |
| UniRef90_A0A022RS67    | P M P G K L D E I F D T M A N D D G K V L T F E E F                       |    |    |
| UniRef90_E8ZA56        | P Q D I S M D L F E H I D T D N S D G Q I V T S F Q E F                   |    |    |
| UniRef90_UPI00033438C1 | K G T N Y L A N V F E K K D Q N S D G Q I V T S F E F L S L L G D I A S   |    |    |
| UniRef90_UPI0003F11016 | D D P D T V D I I M Q S L D Q N R N K K V D D F P E Y L L M M F K L A Q   |    |    |
| UniRef90_E9QHF5        | Q D K D A V D K V M   |    |    |
| UniRef90_M4CD18        | L K D A R V A E I L Q A I D S N T D G F V D D F E E F V A                 |    |    |
| UniRef90_D8RF67        | L K E S M V A E I L Q A M D C N C D G L V D D F E E F V A A T L H V H Q   |    |    |
| UniRef90_V4T8C1        | T E P G K L D E I F D L M D A N N D G K V T T F D E F                     |    |    |
| UniRef90_B9F285        | K G P R V L E I I L Q A I D S N T D G L V D D F E E F V A A T L H I H Q   |    |    |
| UniRef90_A9TY96        | K E S R V L E I I L Q A M D S N A D G I V D D F E E F V A A T L H I H Q   |    |    |
| UniRef90_UPI0003512254 | Y D A E K I K E V I S G A D S D N D G R V D D F S E F V A M M R K         |    |    |
| UniRef90_F6VB35        | K N K A V I N K I F Q G L D A N Q D E Q V I D D F Q E F I S L             |    |    |
| UniRef90_U6NU05        | E E E V D E I I K E V D K D S D G D Q I V D D F E E F V Q M I A           |    |    |
| UniRef90_UPI000443F200 | E D T D A I K E M Q Q N L D S D S D G K V I D D F Q E Y L S L I G Y I A N |    |    |
| UniRef90_M7BV47        | P S E V E L A I I M Q R L D M D G D G Q V V D D F D F M T L I G           |    |    |
| UniRef90_N6UIZ3        | I P D Y C V K K I H D L H D V N Q D R K L N F D E F M Y M I               |    |    |
| UniRef90_UPI0003EBC46C | K D V G S F D E K L K S L N V K G D L F K N Y W S L I G E L A K           |    |    |
| UniRef90_Q9S786        | G D P D T L K E I I R E V D T H D G R I N Y D F V A M M R K               |    |    |
| UniRef90_UPI0003D0CF38 | L T P G D I R A V V T E A D V N G D G T V D D F E E F V K M M             |    |    |
| UniRef90_G3PGD7        | G L K E V E D I L R D V D L N Q G D G L V D D F E E F V R M M S R         |    |    |
| UniRef90_L5M120        | K D P L A V D K I M K D L N Q C R D                                       |    |    |
| UniRef90_UPI0003BBC324 | K G K H F L A H I F E D E D K N H D K K I I E F S E F L S V L G V I A     |    |    |
| UniRef90_A0BF10        | E V K E H V D T V F K G T I I N R N G E Y I D D F E F L I                 |    |    |
| UniRef90_T0Q574        | I D P V E L D A M I S G T I D A D N G E Y I S F K E F I S                 |    |    |
| UniRef90_UPI000298A7A3 | L K K G E L E E I L K E L I D I N S D G T I D D F E E F V M M L           |    |    |
| UniRef90_I0YVX8        | Q N V E E V L K R D V D K N Q D G D I D D F E E F C E M M R N M           |    |    |
| UniRef90_V7BL56        | I G D V R L E E M M R E A D Q D N D G R I D D F N F V A M M Q K           |    |    |
| UniRef90_V4MBV7        | A S P E E T K S M M K E L D L D G N G F I D M D E F V A L                 |    |    |
| UniRef90_A0A059AHB8    | K E P R V L E I I L Q A I D S N T D G K I D D F H E F V A                 |    |    |
| UniRef90_T0S1P1        | P A E V D A I M S A L D R D T D G S I S D D F L A L A R L A M             |    |    |
| UniRef90_E4X8N6        | T E E Q A A E L M K K M D K N N D G A V T F E E F H S Q M A E I C N       |    |    |
| UniRef90_A0A016VSB2    | L S P D E I D A M M M N I D S N G D K L I D D F P E F C T L M S R V       |    |    |
| UniRef90_F2U5C1        | I D S E Q I L R D L M C Q I I D A D G D G T I D F A E F M E M L           |    |    |
| UniRef90_UPI000328EA3F | E G Q E T Y R E L L S E L D E H T G N K L D D F E D F M I L L L S I T     |    |    |
| UniRef90_K1QLU4        | M D G L D A D A L F E E V D L N Q D G R I C D D F                         |    |    |
| UniRef90_S8DPG0        | N E E D A L E K V M K D F D V S L D S R I D L N E F V S G V G K           |    |    |
| UniRef90_UPI000331838E | E G Q E K Y K D L L S E L D H N T E N K L D D F E D F V I L L L S I T     |    |    |
| UniRef90_Q84UL5        | G S L A T V R E M I C N V D R N S D G R V D D F G E F K S M M Q G I T     |    |    |
| UniRef90_F6PSP1        | P S N C G L E E K M   |    |    |
| UniRef90_UPI00045DA9E5 | A G A E L D E V L R E V D L N G D G T V D D F D E F L L M L               |    |    |
| UniRef90_A9UZJ7        | M T K E V D E I I H L F D A N K D G Q R I D D Y R E F                     |    |    |
| UniRef90_G1X4H3        | L T D A E V D E M I R E A D Q D G D G R I D D Y N E F V Q L M             |    |    |
| UniRef90_UPI00044441DE | A G G K N I E E I F K G V D F N Q D G A V D D F Q E F A M M I A G Y A S   |    |    |
| UniRef90_UPI0003C46552 | K D V G S L D E K M R S L D V N S D E E L K F S E Y W R L V G E L A K     |    |    |
| UniRef90_J4D7E2        | L T H D M V D E L N E V D L D R D G T I S Y Q E F Y S M L                 |    |    |
| UniRef90_F0V7N0        | D I L E D M M H D F D L N G N G H I D L D E F V E A V                     |    |    |
| UniRef90_M0WZ48        | G D D L S L D N M I R E V D Q D N D G R I D D Y N E F V A M M Q K         |    |    |
| UniRef90_B8BI23        | D N E I E Q L M E A A D A D N G N G I D D Y E F V T                       |    |    |
| UniRef90_W1NL75        | G D D A T I K E V I Q E V D T D N D G R I N Y Q E F V A M M R K           |    |    |
| UniRef90_A0A024GRR1    | E E Q A E E I L N E I D I N G D E Q I S F E E F L I M M                   |    |    |
| UniRef90_D8U1K7        | Y P E E E L D A V M Q T Y D T N K D G Q I S F E E F                       |    |    |
| UniRef90_M4DYY0        | G G D Q W I K D I F F D V D L N K D G R I S F D E F K A M M               |    |    |
| UniRef90_C3YER0        | L D K D E L V D V I Y G L D K D G N G E I D D F D E F K A L M             |    |    |
| UniRef90_F2DTL3        | R N L A A V Q M I C N V D R D R D G Q V D D F G E F K C M M Q G I T       |    |    |
| UniRef90_V8PA59        | Q G Q E T Y Q E M M S V L D E N R N E K I D D F E D F M V H V V S L T     |    |    |
| UniRef90_C5X1N3        | R S L A S V Q E M I C N V D R N C D G R V D D F G E F K N M M Q G I T M   |    |    |
| UniRef90_Q5XLG2        | M E D V H L E E M I Q E A D Q N D G Q I D D Y S E F V A M M               |    |    |
| UniRef90_R4WDJ6        | H L G L K A M I K E V D E D G D N K I S F R E F M L I F R K A K           |    |    |
| UniRef90_Q             |   |    |    |



|                        | 1         | 10  | 20                                  | 30                                  | 40                                |  |
|------------------------|-----------|---|-------------------------------------|-------------------------------------|-----------------------------------|--|
| UniRef90_X6M856        |           |   | D L D K D E                         | N G T L                             | S K Q E L K D A L I R I D P S F K |  |
| UniRef90_V9KNS8        |           | S L L E G F R H Y                         | D K N G D                           | N G K I                             | D R E E L R D V F L Q F K L D L E |  |
| UniRef90_V7BJZ6        |           |   | Y F D K D G                         | S G Y I                             | T Q E E L Q Q A C D E F G         |  |
| UniRef90_P28583        |           | E N L V S A F                             | S Y F D K D G                       | S G Y I                             | T L D E I Q Q A C D F G           |  |
| UniRef90_V9E5K3        |           |   | F Q E F D V D                       | N S G S I                           | S P D E L R Q L L L A S G E D M D |  |
| UniRef90_B9HPN3        |           | M D A V R S A F                           | Q Y F D K D G                       | S G Y I                             | T V D E L Q Q A C A E H N         |  |
| UniRef90_K3WPK0        |           | E T V R A A F S R Y D                     | V D E                               | N G K I                             | S K E E L K Q I L G K E L L G G V |  |
| UniRef90_Q22AS9        |           |   |                                     | N G K I                             | S K E E L K Q I L G K E L L G G V |  |
| UniRef90_D8LB03        |           | E E L K N F R Q Q W A D K D G N           | L T                                 | D R K E I V R L V Q T               | L N I T                           |  |
| UniRef90_G3I3Y8        |           | E E L R D A F R E F D T                   | N G D G C                           | S V G E L R A A L K A L L G E       | R                                 |  |
| UniRef90_B2LGI9        |           | D E L R A N L R D Q F D A I D V D K G T I |                                     | S L E E M R Q A L K A D L           | P W K                             |  |
| UniRef90_H7BYZ3        |           |   | L R F A F R I Y D M D K             | D G Y I                             | S N G E L F Q V L K M M V G N D T |  |
| UniRef90_A9U2K6        |           | M D P M R D A F Q M F D                   | K D G D S                           | R I                                 | S A N E L Q S V L V S L G D K G   |  |
| UniRef90_A0A059A6K5    |           | E H L R R A F                             | M F F D K D D S                     | S G Y I                             | E F G E L S E A L A D E S G V     |  |
| UniRef90_L8H786        |           |   | A A E D D S                         | G E L                               | S F E E V K E L L P T L D V D A   |  |
| UniRef90_Q23G85        |           |   | I F Q N F L D K D G D               | G Q L                               | S K E E L I E G Y E R L I G D K Q |  |
| UniRef90_Q22T46        |           | E A I K A V F T K F D K D                 | N S G Q L                           | D Y S E L K Q V A Q E L G V Q L E   |                                   |  |
| UniRef90_F6S6F7        | K T       | M T E T Y K L F C K Y D R D               | N S E T L                           | E V S E L F L L L Q D               | C K I P                           |  |
| UniRef90_I0Z7I9        |           | A N I L A A F N K F D T D                 | H S G A L                           | T R D E I R E A L N                 | S M G                             |  |
| UniRef90_A0E457        |           | L E T A F K L F D K                       | D G N G I                           | T K Q E L K E I L G                 | G L N                             |  |
| UniRef90_H3ERH9        |           | E L R E A F R L F D                       | K E G N G Y I                       | S R P T L K A L L K E I A D D L T   |                                   |  |
| UniRef90_G4ZP04        |           | M D M F K E T F A L F D K D E             | S G C I                             | D R D E L R G M L L A L G Q Q L L S |                                   |  |
| UniRef90_I1P5W0        |           | E H L L A A F A                           | Y F D R D G                         | S G Y I                             | T V D E L E H A C R D H N         |  |
| UniRef90_A0A059LN71    |           | E H M V R A F R H F D A D                 | N S G S I                           | S P A E L K R A L A S A N G M T     |                                   |  |
| UniRef90_K7U9C2        |           |   | L A E A F R A F D                   | R D G N G F I                       | S A A E L A R S M A L M G H P I C |  |
| UniRef90_G3GWD0        | A I G     | P I I K V I N R Y E V N D N N N W R M     |                                     | K K G K L K M L M E K E L P D L L   |                                   |  |
| UniRef90_Q22429        |           | E L E D V F R K F D T                     | N G D G K I                         | I S K S E L S A I L K               | C R                               |  |
| UniRef90_K7V9A7        |           |   | F F D K D G N G F I                 | E P E E L R E A L V D N G A A D     |                                   |  |
| UniRef90_UPI000298EF35 |           | L K E I R C A F R Q F D C                 | D G D G K I                         | T I D E L K D G M K T L L G E K     |                                   |  |
| UniRef90_K0SA29        |           |   | L A E A F D H I D D D D S           | G Y I                               | S K E N L M Q L L G E N V T G     |  |
| UniRef90_A0A024U2T7    |           | D E L I A A L F D E                       | S A D E D K S                       | G S G V                             | D E Q E F R K L L V R M D I C     |  |
| UniRef90_V9PPE0        |           | N I R D A F K Q F D                       | K D G N G Y I                       | D R D E L R S L M I T L G E K       |                                   |  |
| UniRef90_R1CU29        |           |   | E Y A D K D G N G T L               | D R Q E V R E A L Q D L G F D F L   |                                   |  |
| UniRef90_W5ERC3        |           | E H L Y T A F Q F F D K D                 | N S G Y I                           | T R D E L Q A L K E K               | G M                               |  |
| UniRef90_Q38870        |           | D H L F A A F S Y F D K D E               | S G F I                             | T P D E L Q Q A C E E F G           |                                   |  |
| UniRef90_M0S040        |           |   | E M E R V F K R F G A E E D D G K I | S S A E L G E A L R V L G S         |                                   |  |
| UniRef90_I1GLT7        | S L       | E E V A D I K K M F D G M D V N K G K L   |                                     | T F E E F K A G L R K L G N         | K                                 |  |
| UniRef90_UPI00032B19E1 | K Q I     | K D M E K M F K Q Y A G R D G             | F I                                 | D L M E L K L M M E K L G A P Q T   |                                   |  |
| UniRef90_M0S5M7        |           | D H L Y K A F E C F D K D K               | S G Y I                             | T V E E L E Q A L K K Y N M G       |                                   |  |
| UniRef90_W5MWD6        | K A I     | A A L V F Y N S A G A D G                 | R L                                 | T K G E A K E M L L S Q F Q A F I   |                                   |  |
| UniRef90_Q42396        |           | E N L V A A F S F F D K D A               | S G Y I                             | T I E E L Q Q A W K E F G           |                                   |  |
| UniRef90_J4UB84        |           | E E I R E A F K V F D K                   | N N D G H I                         | S A A E L K H V M T N L G E K       |                                   |  |
| UniRef90_G0QS13        |           | E R L L Q A F K M F D                     | Q D G S G K I                       | S K Q E L K N V L G D Q E E Y K N   |                                   |  |
| UniRef90_S9WB37        |           |   | G D R N H D G H L                   | T L K E V K T L M V R L N V E       |                                   |  |
| UniRef90_D8LCM7        |           |   | R S S A E T A K S G Y L             | S L A E L K A A L L R A D P L       |                                   |  |
| UniRef90_G4VPD7        |           |   | S I D K D K S G Y L                 | T S N E I C T L L H E C D Y N R     |                                   |  |
| UniRef90_D8RYX6        |           | L R K A F N R L D K D E                   | S G F I                             | E K E E L R E A L Y D D R G A       |                                   |  |
| UniRef90_B9SLE6        |           | E N L L A A F S Y F D K D G               | S G Y I                             | T V D E L Q Q A C K D F G           |                                   |  |
| UniRef90_K3X9Q4        |           |   | L R D A F N R Y D S D Q             | S G Y I                             | D K Q E F K R M F K E E L C Q L L |  |
| UniRef90_F6PQ89        |           | L E M A F K V F D R                       | D N N G F I                         | S R D E L R N V L R T M T E N       |                                   |  |
| UniRef90_W9S192        | S M E E   | V Q K I F N K F D K N R                   | D G K I                             | S R S E L R D V L G A L G S K       |                                   |  |
| UniRef90_F7H782        |           |   | G R I                               | S V G E L R A A L K A L L G E R     |                                   |  |
| UniRef90_A0A024UX31    |           | L A Q C F A H F D                         | K D G S R E                         | I S T A E F M T A L K E L G M Q V D |                                   |  |
| UniRef90_I1I264        |           | E D M R E A F R V F D A                   | N G D G Y I                         | T V E E L G A V L A S L G L K Q G   |                                   |  |
| UniRef90_Q38868        |           | E N L Y K A F Q F F D K D                 | S S G Y I                           | T I D E L E S A L K E Y G M         |                                   |  |
| UniRef90_K4C2Y1        |           | E N L L S A F S F F D K D G               | S G Y I                             | T I E E L Q Q A C K E F G           |                                   |  |
| UniRef90_UPI0000F2BD8F |           | I V K L I E I F H K Y S T N K E G W D E L | N L K E L T Q I I K N E Y P V F I   |                                     |                                   |  |
| UniRef90_W4Z066        |           | E D I R E A F R V F D K                   | G G N G Y I                         | E N S E L K I V L T F L D           |                                   |  |
| UniRef90_M5BIQ7        |           | E K L R F A F K V Y D M D R               | D G Y I                             | S N G E L Y L V L K M M V G N D T   |                                   |  |
| UniRef90_UPI00027FB55D | K A I     | A T T A L I F R N S S D S D G             | K L                                 | E K A T A K N L L Q T Q F R N F T   |                                   |  |
| UniRef90_UPI000359C16D | H A M E T | U P I 000359C16D                          | R Q I                               | K D M E S L F R R Y D S G K D G Y I | D L M E L K L M M E K L G A P Q T |  |
| UniRef90_F7CN52        |           |   | Y F D Q D G                         | S G Y I                             | T Q E E L Q Q A C E K F G         |  |
| UniRef90_M1AAW2        |           |   | Q F D A I D I D K G S I             | S L E E M R Q A L K A D V P W K     |                                   |  |
| UniRef90_V4LSD2        |           | L E E L Q E A F N K I D V D               | N S G Y I                           | S D Y E L Q D L F K E A S L P L P   |                                   |  |
| UniRef90_F7FJ44        |           | E K L M L I F Q Q I D S D                 | H S G Q L                           | N K E E L K K L L R D M S I P I K   |                                   |  |
| UniRef90_A0CM45        |           | L Q E I E S A F K K F D K D               | N S K T I                           | D K Q E L K D L L E K T N L S Q K   |                                   |  |
| UniRef90_D2VRX1        |           | E L R I A F R E F D K D Q                 | D G R I                             | T V A E L R Q V A P A L L G E P     |                                   |  |
| UniRef90_H0VAX4        |           | E E I R E L F Q V F D                     | K D G N G Y I                       | S A V I E L H V M T K L G E         |                                   |  |
| UniRef90_UPI00046B4C0A |           | E N L V S A F A F F D K D G               | S G F I                             | T I D E L S Q A C E Q F G           |                                   |  |
| UniRef90_I1R4E6        |           | E H L H K A F S Y F D K D G N             | G Y I                               | E P E E L R Q T L M E D G V D D C   |                                   |  |
| UniRef90_A0A022QFE6    |           |   | Q V F D L M D K D K G T L           | S I E E V K T L M D M L G M K       |                                   |  |
| UniRef90_D8TJL4        |           |   | R S V F D E F D V D K               | S G A I                             | S P D E L R T L L K S V G E D A   |  |
| UniRef90_A0A024TCD7    |           |   | F A S I D V D G G R V               | N R D M L Q R A L E K S D H P L K   |                                   |  |
| UniRef90_W0T9F3        |           | T L L E A F R H Y D                       | K N G D G R I                       | D K E E L R K S C F G L N I D       |                                   |  |
| UniRef90_M7BXM0        |           | E R L M T I F K N V D R D G N             | G S L                               | S E N E L Q E A L I N G D Y T K     |                                   |  |
| UniRef90_A0A024JJ22    |           |   | A T F S K Y D V                     | G N D G Y L                         | D L A E L K I M M E K L G A P Q T |  |
| UniRef90_Q7PFP7        |           |   | A I F E K Y D L                     | D G D G K I                         | S L Q E L K A M I R G P D F S K D |  |
| UniRef90_W4X378        |           | E H L Y T A F Q Y F D K D                 | N S G F I                           | T V E E L E A L Q E Q K L           |                                   |  |
| UniRef90_I1IUM9        |           |   | F Q R F F D K D G N G F I           | D L T E L Q E A L A D E S G E       |                                   |  |
| UniRef90_S5S2U5        |           |   | A V D K D G S G Q L                 | S E K E L R A A L V N G D W S S     |                                   |  |
| UniRef90_S8AIV5        |           | E N I A R A F A Y F D T D                 | N S G Y I                           | T V D E L K K V I K E N N V D V D   |                                   |  |
| UniRef90_C1MJ58        |           |   | F S I Y D M D K G Y I               | S N G E L F Q V L K M M N L Q D A   |                                   |  |
| UniRef90_UPI0003292B10 |           |   | L K E A F D A Y D                   | D D K T G T I                       | S V E E F A K V M K S T G Q N     |  |
| UniRef90_S3D9S1        |           | D Q V Y K A F Q H F D K D                 | N D G H I                           | T K E E L E M A M K E H G V         |                                   |  |
| UniRef90_D7M1T0        |           | V E L L R E A F R V F D                   | K D G D G Y I                       | E A M E L K R V L E C L G L D K G   |                                   |  |
| UniRef90_UPI00023B23CD |           |   | M F F D K D G                       | S G Y I                             | E S D E L R E A L A D E S G E     |  |
| UniRef90_V4THR6        |           |   | D S V R A I F N A F D A             | D G N G T L                         | D K T E V L N A L R M W D Q S V K |  |
| UniRef90_L8H2U6        |           | V D S M I D I F H H W D I                 | N H S G Y I                         | E K A E L K Q C C S D L R           |                                   |  |
| UniRef90_A7S612        |           |   | E M I R E A F R V F D               | R D G N G F I                       | T A E E F R Y F M T H M G E Q F S |  |
| UniRef90_U1M462        |           |   | E H L F K A F Q Y F D K D           | N S G F I                           | T R D E L E S A M K E Y G M       |  |
| UniRef90_M5X0K0        |           |   | E L E A F N A F D L D               | H N S Y V                           | G A A E I R V L I N I G E T       |  |
| UniRef90_F0VYX0        |           |   |                                     |                                     |                                   |  |

|                        |   | 50 | 60 | 70 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|------------------------|---|----|----|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UniRef90_X6M856        | D | D  | Q  | D  | L | S | N | A | F | T | S | A | D | R | N | G | D | G | K | I | D | Y | E | E | F | L | R | I | L |   |   |   |   |   |   |   |   |   |   |
| UniRef90_V9KNS8        |   | P  | A  | L  | I | D | E | L | I | Q | Y |   | D | Q | D | G | D | G | T | I | N | F | L | E | F | A | N | F | L |   |   |   |   |   |   |   |   |   |   |
| UniRef90_V7BJZ6        | I | K  | D  | V  | R | L | E | E | L | I | K | E | I | D | E | D | N | D | G | R | I | D | Y | N | E | F | V | A | M | M | Q | K |   |   |   |   |   |   |   |
| UniRef90_P28583        | L | D  | D  | I  | H | I | D | E | D | M | I | K | E | I | D | Q | D | N | G | Q | I | D | Y | G | E | F | A | A | M | M | R | K |   |   |   |   |   |   |   |
| UniRef90_V9E5K3        | D | T  | E  |    |   | L | A | S | V | I | Q | Q | A | D | T | D | H | D | G | E | I | N | F | R | E | F | I | A | L | M |   |   |   |   |   |   |   |   |   |
| UniRef90_B9HPN3        | M | T  | D  | V  | L | L | E | D | I | L | K | E | V | D | Q | D | N | D | G | R | I | D | Y | G | E | F | V | A | M | M | Q | K |   |   |   |   |   |   |   |
| UniRef90_K3WPK0        | V | S  | A  | R  | D | L | K | A | A | L | R | V | L | D | R | D | K | N | G | I |   | D | F | D | E | F | V | A |   |   |   |   |   |   |   |   |   |   |   |
| UniRef90_Q22AS9        | Y | D  | E  | A  | Y | W | D | N | M | I | K | E | V | D | K | N | G | D | G | E | I | D | Y | N | E | F | I | D | M | M |   |   |   |   |   |   |   |   |   |
| UniRef90_D8LB03        | A | S  | S  | S  | Y | I | K | K | K | M | K | E | V | D | F | N | G | D | G | V | L | Q | F | K | E | F | V | F | L | M | R | M | L |   |   |   |   |   |   |
| UniRef90_G3I3Y8        | L | S  | Q  | R  | E | V | D | E | I | L | Q | D | I | D | L | N | G | D | G | L | V | D | F | E | E |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| UniRef90_B2LG19        | L | K  | D  | S  | R | V | M | E | I | V | E | A | I | D | S | N | T | D | G | F | V | D | F | T | E | F | V | A | A | T | L | H | V | H | Q |   |   |   |   |
| UniRef90_H7BYZ3        | Q | L  | Q  | Q  | I | V | D | K | T | I | I | N | A | D | K | D | G | D | G | R | I | S | F | E | E | F | C | A | L | F | A | G | L | A | S |   |   |   |   |
| UniRef90_A9U2K6        | H | S  | I  | E  | E | C | R | Q | M | I | N | S | V | D | K | D | G | D | G | H | V | D | F | Q | E | F | L | E | L | M | G | C |   |   |   |   |   |   |   |
| UniRef90_A0A059A6K5    | M | D  | A  | D  | V | V | N | E | I | M | R | E | V | D | T | D | K | D | G | R | I | S | Y | E | E | F | V | A | M | M |   |   |   |   |   |   |   |   |   |
| UniRef90_L8H786        | K | T  | D  | E  | E | V | R | R | V | M | N | A | L | D | K | D | A | S | G | T | I | S | F | E | E | F | V | N | L | L | F | C | L |   |   |   |   |   |   |
| UniRef90_Q23G85        | Q | A  | Q  | K  | I | V | E | Y | V | F | K | E | I | D | Y | D | G | S | G | K | V | S | F | Q | E | F | L | V | A | T | A | S |   |   |   |   |   |   |   |
| UniRef90_Q22T46        | T | N  | E  |    |   | I | Q | N | I | F | Q | E | L | D | V | N | K | D | Q | K | I | L | S | F | E | E | F | W |   |   |   |   |   |   |   |   |   |   |   |
| UniRef90_F6S6F7        | T | S  | E  | A  | E | V | K | K | C | L | K | A | M | D | T | N | G | D | G | V | M | D | F | M | E | F | M | T | F | L | G | M | I | Y | M |   |   |   |   |
| UniRef90_I0Z7I9        | S | T  | D  | E  | E | I | N | M | I | D | Q | F | D | T | N | H | D | G | E | I |   | D | Y | S | E | F | L | A | M | M |   |   |   |   |   |   |   |   |   |
| UniRef90_A0E457        | L | Q  | D  | N  | Q | W | E | N | V | F | M | E | L | D | T | N | G | D | G | E | V | S | F | Q | E | F | T | S | L | I | L | R | D | T | K |   |   |   |   |
| UniRef90_H3ERH9        | D | A  | Q  |    |   | L | D | E | A | V | D | E | I | D | E | D | G | S | G | K | I | E | F | E | E | F | W | E | L | M | A | G |   |   |   |   |   |   |   |
| UniRef90_G4ZP04        | G | S  | E  |    |   | L | D | S | I | M | R | Q | A | D | T | D | G | D | G | K | I | S | F | T | E | F | V | C | M | M |   |   |   |   |   |   |   |   |   |
| UniRef90_I1P5W0        | M | A  | D  | V  | G | I | D | D | I | I | R | E | V | D | Q | D | N | D | G | R | I | D | Y | G | E | F | V | A | M | M | K | K | G | A |   |   |   |   |   |
| UniRef90_A0A059LN71    | V | S  | D  | A  | E | I | K | A | L | L | D | E | V | D | K | D | S | G | T | I |   | D | Y | K | E | F | C | E | M | M | A | K |   |   |   |   |   |   |   |
| UniRef90_K7U9C2        | Y | V  | J  | E  |   | L | T | D | M | M | K | E | A | D | T | D | G | D | G | V | I | S | F | Q | E | F | T | A | I | M | A | K |   |   |   |   |   |   |   |
| UniRef90_G3GWD0        | K | T  | A  | E  | G | L | N | K | V | L | K | E | I | D | T | N | R | D | A | L | V | D | F |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| UniRef90_Q22429        | S | S  | E  | E  | E | I | D | G | V | M | K | D | V | D | S | N | K | D | G | F | I | S | F | D | E | F | V | A |   |   |   |   |   |   |   |   |   |   |   |
| UniRef90_K7V9A7        | S | M  | E  | E  | V | V | D | D | I | L | Q | E | V | D | T | K | D | G | K | I |   | S | Y | E | E | F | V | A | M | M |   |   |   |   |   |   |   |   |   |
| UniRef90_UPI000298EF35 | L | K  | K  | G  | E | L | E | E | I | L | A | D | I | D | L | N | K | D | G | N | I | D | F | D | E | F | V | M | M | L |   |   |   |   |   |   |   |   |   |
| UniRef90_K0SA29        |   |    |    |    |   | N | H | I | E | R | L | I | E | V | D | R | D | G | D | G | R | I | S | F | E | E | F | F | S | M |   |   |   |   |   |   |   |   |   |
| UniRef90_A0A024U2T7    | I | S  | D  | E  | E | V | D | K | L | V | E | V | D | T | N | N | G | L |   |   |   | E | W | D | E | F | V | M | M | V | S | K |   |   |   |   |   |   |   |
| UniRef90_V9PPE0        | L | T  | D  | E  | E | I | D | E | M | M | Q | E | A | D | F | D | R | D | G | K | I | S | Y | Q | E | F | Y | I | M | M |   |   |   |   |   |   |   |   |   |
| UniRef90_R1CU29        | D | E  | K  | Q  |   | V | G | T | I | V | K | A | D | K | D | K | D | E | V | I |   | D | F | E | E | F | V |   |   |   |   |   |   |   |   |   |   |   |   |
| UniRef90_W5ERC3        | Y | D  | A  | K  | E | I | K | E | I | S | E | A | D | T | D | N | D | G | R | I |   | D | Y | S | E | F | V | A | M | M | K | K | G | A |   |   |   |   |   |
| UniRef90_Q38870        | V | E  | D  | A  | R | I | E | E | M | M | R | D | V | D | Q | D | K | D | G | R | I | D | Y | N | E | F | V | A | M | M | Q | K |   |   |   |   |   |   |   |
| UniRef90_M0S040        | T | A  | P  | D  | E | I | R | R | M | M | A | E | L | D | T | D | G | D | G | Y | I | D | F | Q | E | F | S | A | F |   |   |   |   |   |   |   |   |   |   |
| UniRef90_I1GLT7        | M | H  | D  | S  | D | L | Q | M | L | M | D | A | A | D | L | D | K | N | G | T | L | D | Y | G | E | F | V | T |   |   |   |   |   |   |   |   |   |   |   |
| UniRef90_UPI00032B19E1 | H | L  |    |    |   | G | L | K | N | M | I | K | E | V | D | E | D | F | D | S | K | L | S | F | R | E | F | L | L | I | F | R | K | A | A |   |   |   |   |
| UniRef90_M0S5M7        |   |    |    |    |   | D | E | K | T | L | K | E | I | L | A | E | V | D | I | D | K | D | G | R | I | N | Y | D | E | F | V | T | M | M | K | K | D | T | S |
| UniRef90_W5MWD6        | R | G  | Q  | E  | K | Y | K | E | I | F | A | D | L | S | E | D | K | E | K | K | I | A | L | E | D | F | M | V | L | V | I | S | L | T |   |   |   |   |   |
| UniRef90_Q42396        | I | N  | D  | S  | N | L | D | E | M | I | K | D | I | D | Q | D | N | D | G | Q | I | D | Y | G | E | F | V | A | M | M | R | K |   |   |   |   |   |   |   |
| UniRef90_J4UB84        | L | S  | D  | D  | E | I | T | Q | M | I | R | E | A | D | K | D | G | D | G | M | I | D | Y | N | E | F | V | T | M | M |   |   |   |   |   |   |   |   |   |
| UniRef90_G0QS13        | Q | D  | D  | N  | I | W | D | Q | M | I | Q | E | A | D | K | N | G | D | G | E | I | D | F | Y | E | F | V | E | M | M |   |   |   |   |   |   |   |   |   |
| UniRef90_S9WB37        | M | D  | P  | L  | T | L | K | A | V | F | E | E | H | D | K | S | G | D | G | V | L | D | Y | D | E | F | V | V | L | F | F | S | L | T | K |   |   |   |   |
| UniRef90_D8LCM7        | L | H  | E  | S  | A | V | E | E | I | M | T | M | L | D | L | N | A | V | G | S | V | S | S | F | Q | E | F | L | K | I | I |   |   |   |   |   |   |   |   |
| UniRef90_G4VPD7        | Y | T  | Q  | M  | E | I | N | K | W | I | E | K | V | D | K | N | N | D | G | K | I |   | S | F | D | E | F | V | L | L | L |   |   |   |   |   |   |   |   |
| UniRef90_D8RYX6        | S | E  | T  | E  | M | I | D | D | I | L | Q | E | V | D | L | D | K | D | G | K | I | S | Y | E | E | F | A | S | M | M |   |   |   |   |   |   |   |   |   |
| UniRef90_B9SLE6        | L | D  | D  | V  | H | L | D | E | M | I | K | E | I | D | E | D | N | D | G | R | I | D | Y | A | E | F | T | S | M | M | R | K |   |   |   |   |   |   |   |
| UniRef90_K3X9Q4        | K | D  | D  | Q  |   | V | D | D | A | M | D | A | M | D | K | S | G | D | G | K | I |   | Q | F | D | E | L | L |   |   |   |   |   |   |   |   |   |   |   |
| UniRef90_F6PQ89        | P | T  | E  | E  | E | L | D | E | M | M | R | E | A | D | T | D | G | D | G | Q | I | D | Y | R | E | F | V | A | M | L | T | R |   |   |   |   |   |   |   |
| UniRef90_W9S192        | T | S  | D  | D  | E | V | K | R | V | M | A | E | I | D | A | D | G | D | G | Y | I | D | F | D | E | F | V | K | F |   |   |   |   |   |   |   |   |   |   |
| UniRef90_F7H782        | L | S  | Q  | R  | E | V | E | I | L | Q | D | V | D | L | N | G | D | G | L | V |   | D | F | E | E | F | V | R | M | M | S | R |   |   |   |   |   |   |   |
| UniRef90_A0A024UX31    | D | N  | G  | D  | T | M | R | A | I | V | D | L | L | D | K | N | K | D | G | K | I | N | Y | D | E | F | V | A | L |   |   |   |   |   |   |   |   |   |   |
| UniRef90_I1I264        | R | T  | A  | E  | E | C | R | R | M | I | G | Q | V | D | R | D | G | D | G | R | V | D | F | H | E | F | L | Q | M | M |   |   |   |   |   |   |   |   |   |
| UniRef90_Q38868        | G | D  | D  | A  | T | I | K | E | V | L | S | D | V | D | S | D | N | D | G | R | I | N | Y | E | E | F | C | A | M | M |   |   |   |   |   |   |   |   |   |
| UniRef90_K4C2Y1        | L | S  | E  | L  | N | L | D | E | I | I | K | D | I | D | Q | D | N | D | G | Q | I | D | Y | G | E | F | S | A | M | M | R | K |   |   |   |   |   |   |   |
| UniRef90_UPI0000F2BD8F | L | T  | C  | S  | S | G | D | K | K | Y | F | D | E | N | K | N | A | N | E | V |   | N | F | N | A | Y | M | K | I | M | G | K | I | A | N |   |   |   |   |
| UniRef90_W4Z066        | I | H  | K  | S  | E | V | D | L | I | K | D | A | D | T | D | G | D | G | R | I |   | E | Y | E | F | V | Q | M | M |   |   |   |   |   |   |   |   |   |   |
| UniRef90_M5BIQ7        | Q | L  | Q  | Q  | I | V | D | K | T | I | M | E | A | D | K | D | G | D | G | K | L | S | F | E | E | F | T | S | M | V | A | K |   |   |   |   |   |   |   |
| UniRef90_UPI00027FB55D | E | G  | Q  | E  | T | N | P | K | Y | L | S | E | L | D | E | H | T | E | N | K | L | D | F | Q | D | F | M | I | F | L | L | S | I | T |   |   |   |   |   |
| UniRef90_UPI000359C16D | E | V  | G  | A  | A | L | S | R | E | I | W |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| UniRef90_F7CN52        | H | L  |    |    |   | G | L | K | E | M | I | R | E | V | D | E | D | L | D | S | K | L | S | S | F | R | E | F | L | L | I | F | R | K | A | A | S |   |   |
| UniRef90_M1AAW2        | L | S  | N  | I  | P | M | E | E | L | M | R | E | V | D | Q | D | N | D | G | R | I | D | Y | N | E | F | V | A | M | M |   |   |   |   |   |   |   |   |   |
| UniRef90_V4LSD2        | L | K  | D  | A  | R | V | A | E | I | L | Q | A | I | D | S | N | T | D | G | L | V |   | D | F | T | E | F | V | V |   |   |   |   |   |   |   |   |   |   |
| UniRef90_F7FJ44        | K | V  | R  | E  | I | V | E | K | I | L | T | F | A | D | N | N | K | D | G | K | I | N | F | E | E | F | V | S | V | M | Q | E | L |   |   |   |   |   |   |
| UniRef90_A0CM45        | K |    |    |    |   | Y | E |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

UniRef90\_G5A387  
UniRef90\_A0A016T248  
UniRef90\_Q9XZP3  
UniRef90\_UPI00042AD88C  
UniRef90\_A8J3S1  
UniRef90\_U5D4H5  
UniRef90\_A4QNI9  
UniRef90\_Q5DDP6  
UniRef90\_M0Z2W7  
UniRef90\_A0C454  
UniRef90\_I7MLL9  
UniRef90\_UPI00032ACF7B  
UniRef90\_UPI0003D7658B  
UniRef90\_F1KKV5  
UniRef90\_UPI0003C8DED4  
UniRef90\_I3QJ82  
UniRef90\_F1S145  
UniRef90\_U4L9T6  
UniRef90\_V9ES17  
UniRef90\_A0A022RKH6  
UniRef90\_H3DYY0  
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UniRef90\_C6JRX0



|                        | 1 | 10                                | 20                      | 30            | 40                                |
|------------------------|---|-----------------------------------|-------------------------|---------------|-----------------------------------|
| UniRef90_UPI0001926DB2 |   | E L K E A F D                     | Y F D K D G D           | G S I         | S S E E L Q T I M S K F G E N L T |
| UniRef90_W5D844        |   | D H I L K A F E Y F D K D         | H S G Y I               | T V D E L     | E E A L K K Y D M G D D           |
| UniRef90_G1SQQ0        |   |                                   | G S S G H L             | S K Q E L     | A V V C Q S I G L Q A             |
| UniRef90_J9IGV4        |   | E K I R F L F N V Y D I D         | S D G L I               | S Q E E L     | K Q V L K Q L V G S D L           |
| UniRef90_M1B6P8        |   | L A E L R E I F R S F D R         | N D D G S L             | T Q L E L     | G A L L R S L G L K               |
| UniRef90_H3A6L5        |   |                                   | K Y A F R E F D D G E I | S T A E L     | R E A A C K L L G E Q L           |
| UniRef90_K3XT53        | A | E E E M A R V F R K F D A         | N G D G R I             | S R S E L     | A A L F E S L G H A               |
| UniRef90_UPI0002C2F4DB |   | E L R A A F R I F D               | K E G K G Y I           | D W D T L     | K Y V L M N A G E P L S           |
| UniRef90_B3N430        | M | A E L K E A F R L Y D             | K E G N G Y I           | T T G V L     | R E I L R E L D D K               |
| UniRef90_I0YLN7        |   | L A V I F T K Y D T               | N D D M V L             | E P S E V     | R K L F Q E E G Y D F D           |
| UniRef90_W9REE7        |   | E H L H K A F E F F D K N Q       | T G Y I                 | E I E E L     | R H A L A D E V I D               |
| UniRef90_I1BZA4        |   | D E L K V C F E K F D             | K N G D G H I           | S E E E L     | K Q V M S E L G E K L T           |
| UniRef90_J3NES2        | I | A E F R E A F S F F D K D G D     | G C I                   | T L E E L     | D T V V R S L G Q T               |
| UniRef90_F2U1P7        |   | R E I F E R A D R D G N           | G V L                   | S K R E L     | K R V L H E D D D L R D           |
| UniRef90_UPI00035A0FD6 | I | K E L R D A F R E F D T           | N G D G Q I             | S V P E L     | R E A M R K L L G Q Q             |
| UniRef90_W9C6K7        |   | L K E A F D A Y D T               | D K G S T G N I         | T I E E F     | G R V M K Q S G Q N               |
| UniRef90_B3RIN1        |   |                                   | F A S V D K D K N Q I   | S A D E M     | R N V V R K Y K F P               |
| UniRef90_F9XJN3        |   |                                   | S I D R D H S           | D K A E L     | S M A F E R A G V A               |
| UniRef90_UPI000441B4E7 | I | A E F K A A F D M F D             | A D A D G G             | G D I         | S T K E L G T V M R M L G Q A     |
| UniRef90_R7VF97        |   | E I R A A F A L F D               | K D G D G T I           | T T E E L     | A T A M R K M G H T               |
| UniRef90_J9IGI9        | S | P D K L K A A F S L F D           | K D G S G S I           | S S E E V     | K E I L C S G Q K                 |
| UniRef90_X6NHR0        |   |                                   | D E N G D G K L         | D S Q E L     | K H A M E K F G A N V A           |
| UniRef90_G1K853        |   | D T L L Q A F R H Y D             | K D G N R K I           | S R Q D F     | K T T C I Q F N P N               |
| UniRef90_A5AIT3        |   | E I I R K L F H                   | S I D E N H D G N L     | S K A E L     | R P L I I Q F E E I D L           |
| UniRef90_W1PU66        |   | E D M R E A F N V F D             | Q N G D G F I           | T V E E L     | R S V L G S L G L K Q G           |
| UniRef90_UPI0001CBB50E |   | E E I K A A F R L F D             | K D G N G Y I           | T A S E L     | R R L R R R D N N L G             |
| UniRef90_F6TMG7        |   | I R L W Y K S F R K D             | C P T G I L             | S L E E F     | K K L Y K Q F P S G D             |
| UniRef90_A0A022RWW3    |   | E V L T K L F K A I D E N D       | D G F L                 | S Q A E L     | R A L I I Q F N E I N M           |
| UniRef90_Q504A7        | I | K E L K D A F K F D               | M D G D G S I           | T T E E L     | R L A M L K L L G E N             |
| UniRef90_E2R8S4        |   | E E I R E A F R V F D             | K D G N G Y I           | S A A E L     | R H V M T N L G E K               |
| UniRef90_Q5DBX4        | S | C A A L R K I F R E M D R D K     | N G T V                 | S K D E L     | K A F M K R D C N F               |
| UniRef90_K3X4Q5        |   |                                   | F D R Y D I D           | N S N F I     | E L P E F K T L L E E L G V P     |
| UniRef90_UPI0002B42980 |   | E Q L M E V F R S F D             | R D G N G Y I           | T A A E L     | A G S M A K M G H P L T           |
| UniRef90_K3XLP3        | I | A E F K E A F S L F D             | K D G D G C I           | T T K E L     | G T V M R S L G Q N               |
| UniRef90_J0DZZ5        |   | S L K A V F D E L D V             | D G D G C I             | T R S E L     | R T A F Q R M G S N L T           |
| UniRef90_E1ZJH8        | M | A A L M A R F K A A D L D G N     | G V I                   | D R Q E L     | Q V L L E R V G D G E D           |
| UniRef90_F0Y714        |   |                                   |                         | H A M T       | K D E L R Y A L T H Y H I H L D   |
| UniRef90_UPI0003D23F6C | I | E S I K R L F H K                 | L D D D H N S Y L       | T P S E L     | E K L T E K F R Q A R L           |
| UniRef90_A7T4H4        |   |                                   | D E D N S G Y I         | D H N E I     | S N A L K K L D I N L P           |
| UniRef90_UPI0001CBB1F0 |   | D E L Q E A F R V F D             | K D G N G S I           | S Y Q E L     | R D V I R N L G E D L T           |
| UniRef90_A0A059LGN2    |   | E E L R E A F R V F D             | K D G N G F I           | S A A E L     | R H V M T N L G E K               |
| UniRef90_J9EEE1        | I | E E I K E A F D L F D T D         | G S G S I               | D P K E L     | K A A M Q S L G F E               |
| UniRef90_UPI0003DEAC97 |   |                                   | T F N R F D             | D G H D G F L | D L S E L K R M M E V L G A P     |
| UniRef90_UPI0002B49D8B |   | E M K K V F G T F D K             | N D D G F I             | T K K E L     | M E S L K S M R M M               |
| UniRef90_F1P3D8        | A | E L R S I F L Q Y A S V E         | K D G H Y M T           | P E D F       | V Q K Y L G L Y T D P R           |
| UniRef90_A0C5A2        |   | D E L N K T F Q A I D K N G       | D G K L                 | S R Q E L     | I D G Y T L V T N N Q E           |
| UniRef90_UPI0003340D3F |   | A I I E T L Y R Y R T D D S       | D R G Q I               | S M E E F     | R K M L F S S H Y N V Q           |
| UniRef90_W1PSL2        |   | E E L K E A F K V F D K D Q       | N G F I                 | S A A E L     | R H V M T N L G E K               |
| UniRef90_UPI0003334A4F |   | D T L L A A F R H Y D K K         | G D G M I               | D K E E L     | Q E S C E Q A N L H L D           |
| UniRef90_I1M756        |   | E E I M G L K Q M F K G M D D N S | G T I                   | T I E E L     | K Q G L A K Q G T K               |
| UniRef90_L7IJW7        | L | K Q L K D V F D L I D             | K D G T G A I           | S A S E F     | A E A M E S L G L S               |
| UniRef90_K3WU76        |   |                                   | K V F T Q Y D V D       | G S G T I     | S P D E L R K L L N E S G E D M D |
| UniRef90_Q9SDM4        | I | D E I S G M R E M F M D I         | D K D K G N I           | T I D E F     | A A A L H K K G Q I               |
| UniRef90_M0XBV7        | M | A E L E Q V F R R Y D A           | N G D G K I             | S A D E M     | A S V L C A L G A P               |
| UniRef90_W3WSJ1        |   |                                   |                         | G S I         | T V E E F A K V M S Q S P G Q P   |
| UniRef90_UPI00045E54BE |   |                                   | F H K F D A D K         | K G F I       | T I V D V Q R V L E S I S V Q     |
| UniRef90_A4F2L6        |   | E H L Q K A F A H F D R           | N G S G Y I             | D M D E L     | R D A L G D D L G P               |
| UniRef90_M4D3C0        | L | E N L K D A F S V Y D I           | D G N G S I             | S A E E L     | H E V L R S L G D E C S           |
| UniRef90_UPI0003EAAE8E |   | E L R D A F G V F D               | R D G D G Y I           | S A G E L     | R A V L R R L G M E E G           |
| UniRef90_B9RIC7        |   |                                   |                         | S G Y I       | E I E E L R E A L N D E V D T C S |

lupas\_21  
 lupas\_14  
 lupas\_28  
 jnet  
 conf  
 sol25  
 sol5  
 sol0  
 jhmm  
 jpssm

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 7 | 5 | 8 | 9 | 9 | 9 | 9 | 8 | 5 | 2 | 5 | 7 | 8 | 8 | 7 | 6 | 5 | 2 | 7 | 8 | 9 | 9 | 9 | 9 | 7 | 5 | 2 | 7 | 8 | 8 | 7 |
| B | B |   |   | B | B |   | B | B | B | B |   |   |   |   |   | B |   |   |   | B | B |   | B | B |   | B |   |   |   | B | B |

|                        | 50  | 60                          | 70 |
|------------------------|---|-----------------------------|----|
| UniRef90_UPI0001926DB2 | S E E L E E M M K E A D A N G D G K V         | D Y A E F V K M M           |    |
| UniRef90_W5D844        | K T I K D I I A E V D T D H D G R I           | N Y Q E F V A M M           |    |
| UniRef90_G1SQQ0        | L D K E E L E D L F N K L D R D G D G K V     | S L E E F Q L G L F S       |    |
| UniRef90_J9IGV4        | Q L Q D I V E K T I Q D L D Q D G D G K L     | K F E E F V S L V A         |    |
| UniRef90_M1B6P8        | P S P D Q L E T L I Q K A D K N D N G L V     | E F S E F V S L V A         |    |
| UniRef90_H3A6L5        | N Q K E L E E I L R D V D L N G D G H V       | D F D E F V M M L           |    |
| UniRef90_K3XT53        | A S D D E L A R M M A E A D A D G D G F I     | S L D E F A A L N A T V A   |    |
| UniRef90_UPI0002C2F4DB | E L E A E Q M M K E A D K D G D G T I         | D Y E E F V A M M T G       |    |
| UniRef90_B3N430        | L T N D D L D M M I E E I D S D G S G T V     | D F D E F M E V M T G       |    |
| UniRef90_I0YLN7        | A A E S K E A V K L L D K N N D G I           | S F E E F V                 |    |
| UniRef90_W9REE7        | N N E E V I N A I M Q D V D T D K D G R I     | S Y E E F A T M M           |    |
| UniRef90_I1BZA4        | G E E I K D M I K D A D T N N D G Q I         | S F E E F K G L I           |    |
| UniRef90_J3NES2        | P T R E E L A E M I R D V D A D G N G T I     | E F A E F L A L M A R       |    |
| UniRef90_F2U1P7        | E L R A A H G H W K D L D A N G D G Q I       | E F E E L V E Y I D K A H K |    |
| UniRef90_UPI00035A0FD6 | L N Y R E V D E I L K D V D L N G D G L V     | D F E                       |    |
| UniRef90_W9C6K7        | P S E E E L A Q I I K E V D L D N D G T I     | N F D E F I A M M T G       |    |
| UniRef90_B3RIN1        | I L N E E V D F L L K A L D V N G D G E I     | D Y R E F I N               |    |
| UniRef90_F9XJN3        | V S N A R L D R F F N Y I D K D R D G T I     | D F S E F L L F I           |    |
| UniRef90_UPI000441B4E7 | P T K E E L D A I I E E V D E D G S G T I     | D F E E F L V M M V R       |    |
| UniRef90_R7VF97        | P T A T E L Q E M I A E A D A D G N G T I     | D F K E F V A L M T K       |    |
| UniRef90_J9IGI9        | I D D K V W D E V I R E V D A D G N G E I     | D F E E F S T M M E K L L Q |    |
| UniRef90_X6NHR0        | D F K R V E S I L K E I D E N G D G E I       | D Y E E F L                 |    |
| UniRef90_G1K853        | L E E E L D A L F D Y C D L D K D G F I       | N Y L E F V N F L           |    |
| UniRef90_A5AIT3        | D R N E A V D K V M S D F D T S N D K D G F V | D E G E F V K G I S R       |    |
| UniRef90_W1PU66        | R T V D D C R R M I R K V D K D G D G M V     | D F K E F K Q M M R D L     |    |
| UniRef90_UPI0001CBB50E | E E E V E E L I R A A D I N G D G Q I         | D Y D E F L K I V           |    |
| UniRef90_F6TMG7        | A S A F A E H A F R T F D K N G D G T I       | D F K E F M C A L           |    |
| UniRef90_A0A022RWW3    | D E D D A L A K V I K D F D T S L D S Q V     | D L N E F V A G I G K       |    |
| UniRef90_Q504A7        | T N R R E V E A V V R E V D N N G D G T V     | D F E E F V K M M S K       |    |
| UniRef90_E2R8S4        | L T D E E V D E M I R E A D I D G D G Q V     | N Y E S F C A L V F K L T Q |    |
| UniRef90_Q5DBX4        | I F P S Q V E H W V N E Y D K N R D G S L     | D Y E E F I G F V           |    |
| UniRef90_K3X4Q5        | A T E E R L A A Y L D E F D T D N D G K I     | S F Q E F                   |    |
| UniRef90_UPI0002B42980 | Y R E L S D M M R Q A D T D G D G V I         | S F N E F T T V M A K       |    |
| UniRef90_K3XLP3        | P T E A E L Q D M I N E V D A D G N G T I     | D F P E F L N L M A R       |    |
| UniRef90_J0DZZ5        | D G D I K A I Y N Q V D V N R D G K I         | N F D E F C Q M M A R       |    |
| UniRef90_E1ZJH8        | E V P M H I G E V M A Q Y D T N R D G V I     | S F E E F V R M             |    |
| UniRef90_F0Y714        | D A E F D K F V S E F D E D G N G T I         | D F R E F I S V V G A       |    |
| UniRef90_UPI0003D23F6C | N H K T S V K E I M K D F D Q N D D H M I     | D E N E F L                 |    |
| UniRef90_A7T4H4        | S R Q I D G I L K G M D L N N D N R I         | D F D E F C A F F S D I     |    |
| UniRef90_UPI0001CBB1F0 | D G E I D Q M V R A A D I D G D G E I         | D F E E F Q A M V           |    |
| UniRef90_A0A059LGN2    | L T E E E V D E M I R E A D S D G D G Q V     | N Y E E F V Q M M           |    |
| UniRef90_J9EEE1        | A K N Q T I F Q M I S D L D K N K S G T I     | D F E E F L D M M           |    |
| UniRef90_UPI0003DEAC97 | Q T H L G L K A M I Q E V D E D G D G R I     | S F R E F L L               |    |
| UniRef90_UPI0002B49D8B | I T E K D A E E M L K G V D E N G D G L I     | D F E E F C V L G G K L M M |    |
| UniRef90_F1P3D8        | Y N P K T V Q E L L A G V A D Q T K D G L I   | S F Q E F L A F             |    |
| UniRef90_A0C5A2        | L A T Q Q V D R I M E L V D I N R S G E V     | D F T E F L I               |    |
| UniRef90_UPI0003340D3F | I H D S Q I D E L A N T M D L N K D G S I     | D F N E F L                 |    |
| UniRef90_W1PSL2        | L T D E E V D E M I R E A D T D G D G Q V     | N Y E E F V R M M           |    |
| UniRef90_UPI0003334A4F | T E L L D Q L F D Y C D V D K D G L I         | N Y L E F A N F L           |    |
| UniRef90_I1M756        | L T E Q E V K Q L M E A A D A D G N G T I     | D Y D E F I T               |    |
| UniRef90_L7IJW7        | S S A E A Q E I I S E I D Q N K D G Q I       | D F H E F L R V M           |    |
| UniRef90_K3WU76        | D A E L A V V I Q Q A D T D Q N E E I         | D F D E W V S               |    |
| UniRef90_Q9SDM4        | V T E K E I E K I M K E A D V D G D G T I     | D Y E E F L A A T I N L G K |    |
| UniRef90_M0XBV7        | P G T G E V Q S M M E M D A D R D G F V       | D L H E F A A F             |    |
| UniRef90_W3WSJ1        | P S E E E V K I T I Q E V D L D G D G T I     | N F N E F I T M M T G       |    |
| UniRef90_UPI00045E54BE | M D E N T L H E I L N E V D L N K N G Q V     | E L N E F L Q L M S A I     |    |
| UniRef90_A4F2L6        | N D T D V I Q D I M H E V D T D K D G Q I     | S Y E E F A S M M           |    |
| UniRef90_M4D3C0        | I A E C R K M I G G V D K D G D G T I         | D F E E F K I M M           |    |
| UniRef90_UPI0003EAAE8E | A R H G D C A R M I A A Y D G D G D G R I     | S F R E F R A M M E N A A   |    |
| UniRef90_B9RIC7        | E D V I N A I M H D V D T D K D G R I         | S Y E E F A T M M           |    |

