

a)

**T1** →  
aaaacaucauacugcuguguuuuggacagccagcccugaacacaucuugggcaaugggag  
1 K T S I L C L D R P A P E T S W A M E  
2 K H L S C C V W T G Q P K H L G Q W R  
3 N I Y L A V F G Q A S P - N I L G N G G

**Alt2** →  
gguaaacuucuaaaguuuuauaggcaagaccagcaaccugcaacaaggucaggggaug  
1 G - L L K V - - A R P A T M Q Q G Q G M  
2 V N F S K F N R Q D Q Q P C N K V R E C  
3 L T S Q S L I G K T S N H A T R S G N A

cauggggugacgacaaggcuggaacgucuccggggaugaagcuuggaaccgaaugug  
1 H W G - R Q G W N V P G L K L G S E L  
2 T G A D D K A G T S R D - S L D P N C W  
3 G I T T R I E R P G I E A W I R T V G

gacggcugcugaguuuugcacaagaagaaugaauugauagcagcugggaauguacu  
1 D G V W S F A Q K R I E L - I S W E V T  
2 T A S G V L H K R E L N C R S A G K L  
3 R R I E F C T K E N - I V D Q I G S Y C

gugguagucugugccugcggccuccagcagcuggaaccugugggagcacaugcug  
1 V V V L V P C G L Q R I E P C G S T Stop  
2 W - S W C P A A S S D W N P V G A H S W  
3 G S P G A I R P P A T G T I W E H I A G

gcauuuuuugcuagagauuaggaagucuuuugcuuccugugaaaaggcuagaauuca  
1 A F F A R D - E V F C F L C E K A - I Q  
2 H F L L E I R K S F A S S V K R L E F N  
3 I F C - R L G S L L L P I - K G L N S M

**T2** →  
uggacugugugacuucaacuaaccaacuaaagaaucguucccagagcauuguucbuga  
1 W T V W T S T N Q L K N C S P E H C S -  
2 G I C G L Q L T N - R T V P Q S I V P E  
3 D C V D F N - P T K E I F P R A L F I R

gaagaaaagaguccaaaccuaccacacucuuuguccaagaauccacaguugga  
1 E G K E S K H L P T P A L C Q E S T V G  
2 K E K S P N T Y P H I L C A K N P Q L D  
3 R K R V Q T P T H T C F V P R I H S W I

**T3** →  
uugcaaggacagugcguucaagaccagcuguuagagauagaaaagcagaagaaggacc  
1 L Q G Q C V Q D P A V E S R K A E E R T  
2 C K D S A F K T Q I L R V E K Q K K G P  
3 A R T V R S R P S C - E - K S R R K D P

cgaggucagcaaguccccucccacaauuggggcagaucugccagcagagaatcg  
1 R G Q Q V P S P Q  
2 E V S K C P P H N  
3 R S A S A L P T M G Q I C Q R E S

b)

Human uagaucagcugggaaguacuugguagucucugugccucgcccagcagcuggaaccucugugggagcacaug/c  
- I S W E V T V V V I V P C G L Q R I E P C G S T Stop/Y

Chimp uagaucagcugggaaguacuugguagucucugugccucgcccagcagcuggaaccucugugggagcacaug  
- I S W E V T V V V I V P C G L Q R I E P C G S T -

Orang-utan uagaucagcugggaaguacuugguagucucugugccucgcccagcagcuggaaccucugugggagcacaug  
- I S W E V T V V V I V P C G L Q R I E P C G S T -

Marmoset uagaucagcugggaaguacuugguagucucugugccucgcccagcagcuggaaccucugugggagcacaug  
- I S W E V T V I L I V P C G L Q R I E P C G S T -

Rhesus auugauagacagcugggaaguacuugguagucucugugccucgcccagcagcuggaaccucugugggagcacaug  
N V D Q I E V T R - S I C I Q P P A T E P C G S T -

Horse guagaucagcugagagguuuugauagcucugugccucgcccagcagcuggaaccucugugggagcacaug  
V D Q I R G Y C D S I G P C A S R A I E P C G S T -

Pig uggaucagcugggagguuuuugauagcucugugccucgcccagcagcuggaaccucugugggagcacaug  
W I S W E V I V I A I V P C A S R G I E P C G S T -

Dog uagaucagcugggagguuuuugauagcucugugccucgcccagcagcuggaaccucugugggagcacaug  
- I S W E V I V I A I V P C A S R A I E P C G S T -

Armadillo gaugaucagcugggagguuuuugauagcucugugccucgcccagcagcuggaaccucugugggagcacaug  
V D Q L G G Y C D G P G A P W P P G I E P C G S T -

Treeshrew tuagaucagcugggagguuuuugauagcucugugccucgcccagcagcuggaaccucugugggagcacaug  
C R S A G R L L - W I G A L W L P R A G P C G S T -

Cow uagcugggagguuuuugauagcucugugccucgcccagcagcuggaaccucugugggagcacaug  
- V G W E V I V I A I V P C A S R G I A A C G S T -

Cat uagaucagcugggagguuuuugauagcucugugccucgcccagcagcuggaaccucugugggagcacaug  
- I S W E V I V I A I V P C A C R A I E P C G S T -

Elephant auugaauacagaucagcugggagcuuuuugauagcucugugccucgcccagcagcuggaaccucugugggagcacaug  
I E L Q I S W E L I V I A I V P H S I E P C G S A -

Rabbit agaucagcugggaaguuuuugauagcucugugccucgcccagcagcuggaaccucugugggagcacaug  
R S A A R L L - - P W C P C L Q G R E P C G S A -

Mouse uguagaucagcugggaacacagagacagcccagcagcuggaaccucugugggagcacaug  
C R S A G K P V R Q P S G P W P P G I D A C G S T -

Rat uguagaucagcugggagcuuuuugauagcucugugccucgcccagcagcuggaaccucugugggagcacaug  
C R S A G E L V R Q P H G P R P P G I D A C G S A -