



 = Outgroup species of the tetrapod/ teleost branch

| TTC29 | | |
|------------------|---|----|
| Human | 1 Y <mark>R N S Y K</mark> K <mark>N I C V D M L R D G Y H K S F T E L F</mark> A L M E R W D A L <mark>R</mark> E A A R V R <mark>S</mark> | 43 |
| Mouse | 1 H <mark>R N S Y K </mark> K <u>S</u> I C V DM L R D G F H K S F T E L F A L M E Q W D K L R E A A K A Q S | 43 |
| Chicken | 1 N <mark>R</mark> K <mark>S Y K</mark> E N I C I D M L R Q G Y H K S F S E L F T L I Q K W N A L <mark>R</mark> E A A G P G S | 43 |
| Xenopus | 1 Y R N S L K N N I C I E M L R K G Y H K S F S E V Y T V I Q R W D A L R D A A G P G S | 43 |
| Ciona_sav_2exons | 1 Y R N S Y K H NM C V EM L K E G F H K S F D E L F N L I E Q R K K T R L D A G M D S | 43 |
| | | |
| Human | 14 L FW L <mark>Q K P L E E Q P D K</mark> L <mark>D Y L Y H Y L T R</mark> A E D A E <mark>R</mark> K | 74 |
| Mouse | 14 L FWQ <mark>Q R P L E D<mark>Q P DK</mark> L D N F Y H Y L <mark>T R</mark> A E A A E <mark>R</mark> K</mark> | 74 |
| Chicken | 44 A I WQ R <mark>Q S L E E Q P D K L D Q L Y H F L T R A E</mark> A A Q <mark>R</mark> A | 74 |
| Xenopus | 44 A I WHQK P L E EQQ EK LDQ LQH F L <mark>T R A E</mark> A A Q <mark>R</mark> A | 74 |
| Ciona_sav_2exons | 44 V LWH <mark>E K P LQ EQ</mark> T <mark>E K L D</mark> Q LW L H L <mark>T K</mark> A <mark>E</mark> A A L <mark>R</mark> V | 74 |

DOCK9

| Human | 11 | MSQPP | LL | P A S | δA | ΕT | R K | (F | TF | R A | LS | K | P | ЗT | ΑA | ΥE | L | R <mark>C</mark> | S | V | S I | Eν | ٧ V | R | G S | V | LL | 43 |
|----------------|----|-------|----|-------|-----|----|-----|-----|----|-----|----|---|---|----|----|-----|---|------------------|---|---|-----|----|-----|---|-----|---|----|----|
| Mouse | 1 | MAQQ | | | | | | | | | | | | | | | | | | | | | | | | | | 42 |
| Xenopus | 1 | MSS | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Medaka_coding1 | 1 | MM | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Medaka_coding2 | 1 | | MA | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elephant_Shark | 1 | | | Ν | 1 S | EV | RK | < F | Τk | R | LS | K | L | ЗT | ΑA | ι E | L | r <mark>C</mark> | S | A | S | EA | ١٧ | R | N S | L | FV | 34 |

CCDC46

| Human | 1 I V E L K L E H E Q E K T H L L Q Q H N A E K D S L V R D H E R E I E N L E K Q L R A 43 | 5 |
|----------------|--|---|
| Mouse | 1 I V E L K L E H E Q E K T H L L Q Q H S A E K D S L V R D H D R E I E N L E K Q L R A 43 | 5 |
| Chicken | 1 I V E L K L E H E <mark>Q E K T</mark> H L F <mark>Q Q H</mark> N A E <mark>K D C</mark> L V R D H E R E I E K L E K Q S R A 43 | ; |
| Xenopus | 1 MVELRLGHEQERTHLFQQHNNEKESIIKEHEKEIDRLEKQLRS 43 | 5 |
| Medaka_coding | 1 MA EQ <mark>R</mark> SQH E <mark>Q E R T</mark> R LQ <mark>QQH</mark> K A E <mark>K</mark> D T M V Q E HQ <mark>R</mark> E V S G V E S Q A <mark>R</mark> A 43 | 5 |
| Elephant_Shark | 1 I V E L K L E R E Q E K T Y L F Q Q H S A E K D S L V R E H E R E I D N L E K Q L R A 43 | 5 |
| | | |
| Human | 44 ANMEHENQIQEFKKRDAQ 61 | |
| Mouse | 44 ANMEHENQIQESKKRDAQ 61 | - |
| Chicken | 44 AMA EHE SRTQECRKRDGQ 61 | |
| Xenopus | 44 TVSDHEAKTQAW <mark>RQRDAQ</mark> 61 | |
| Medaka_coding | 44 A L Q Q H Q Q H S Q E W <mark>R K R D A Q</mark> 61 | |
| Elephant_Shark | 44 A I V EHENQTRQ L RKQDTQ 61 | |