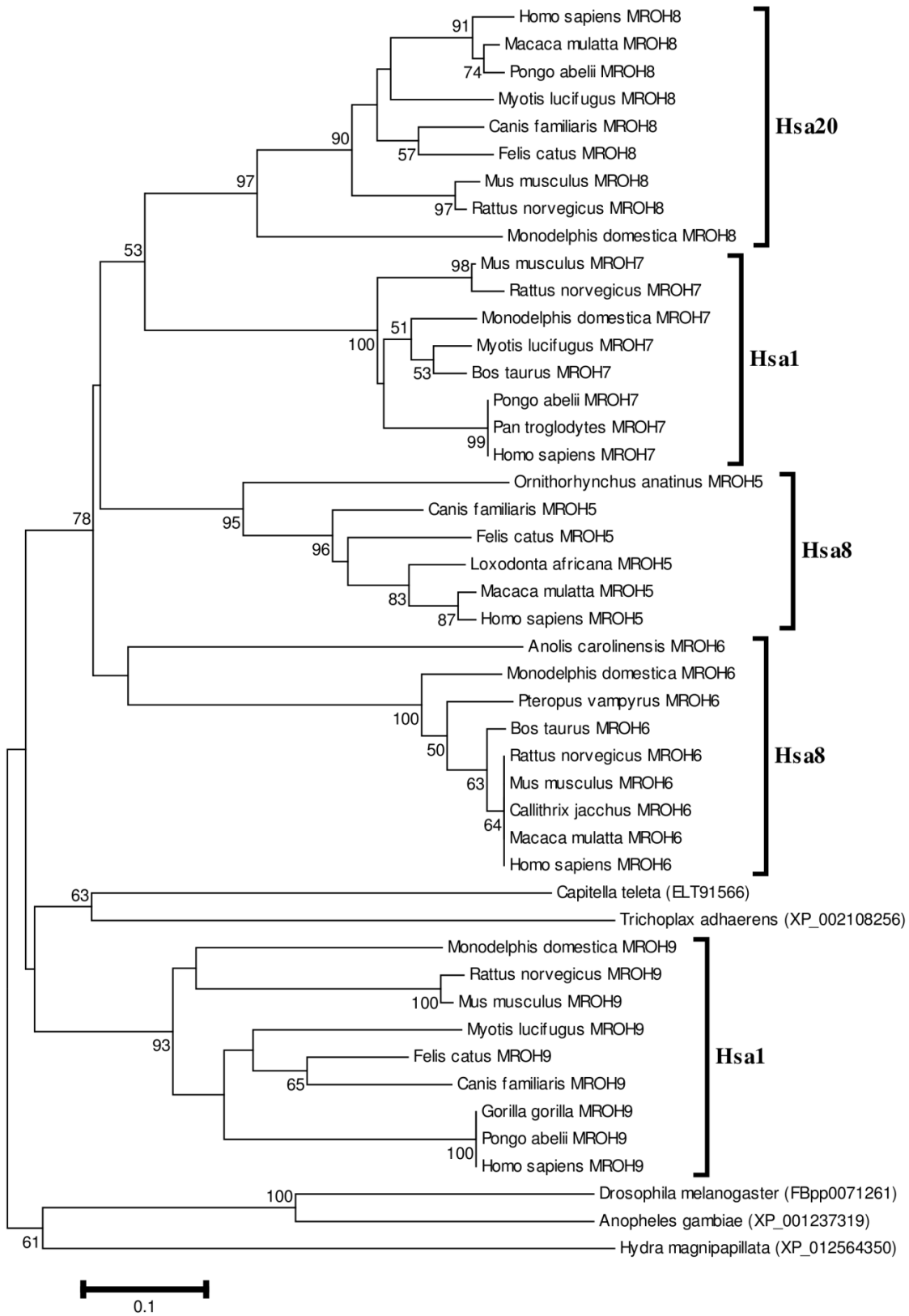


**Additional file 2: Neighbor Joining Trees of gene families (residing on human chromosomes 1/2/8/20) using p-distance method.**

**Co-duplicated group-1**

**MROH8 and STK**

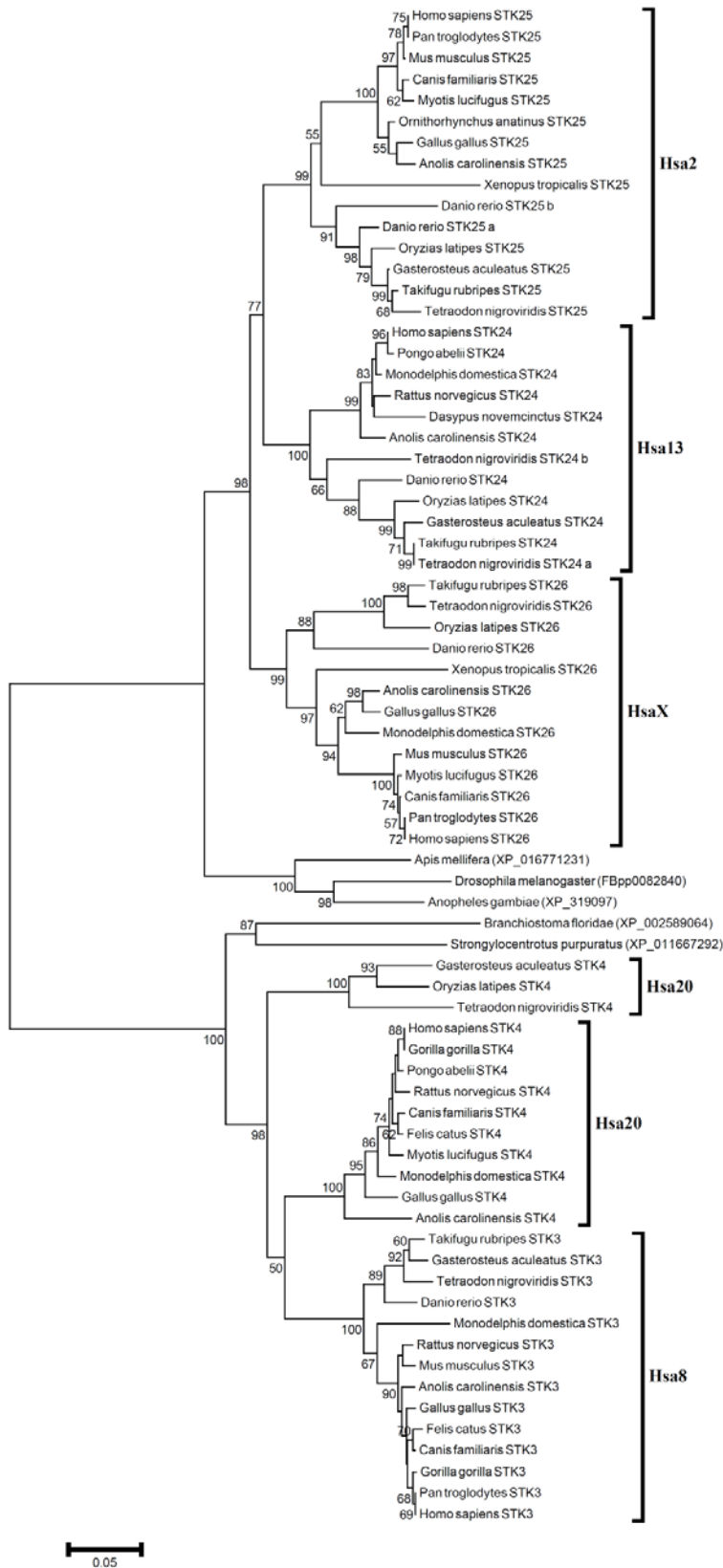
**Maestro Heat-like Repeat-containing Protein Family -MROH**



**Phylogenetic tree of MROH family.**

Neighbor-Joining tree of the MROH family members. Symbols and parameters are the same as described in supplementary Figure 1.1

## Serine/Threonine-Protein Kinase-STK



**Phylogenetic tree of STK family.**

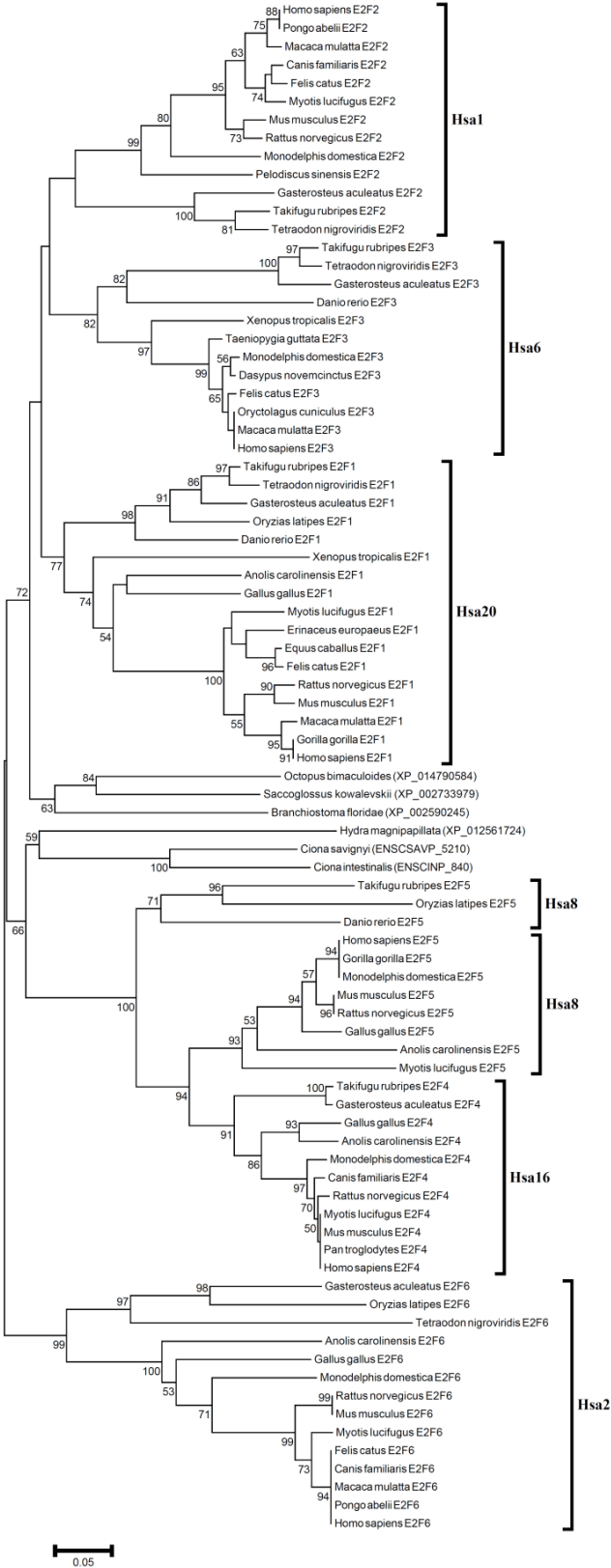
Neighbor-Joining tree of the STK family members. Symbols and parameters are the same as described in supplementary Figure 1.1

## **Co-duplicated group-2**

**E2F, STMN1, EYA\***

**Asterisks (\*)** represent families published previously by our research group (for details see main text).

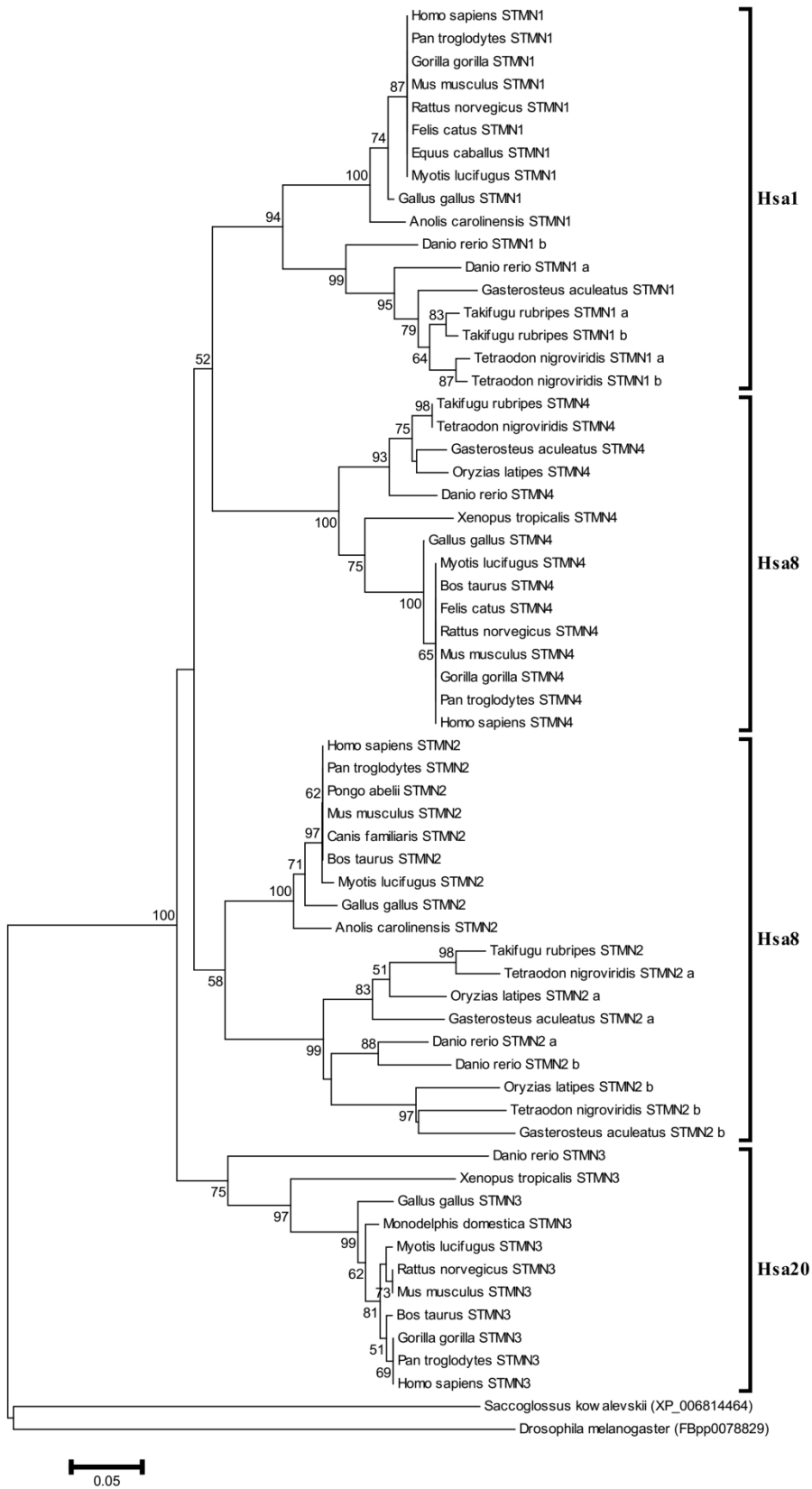
**E2F Transcription Factor-E2F**



**Phylogenetic tree of E2F family.**

Neighbor-Joining tree of the E2F family members. Symbols and parameters are the same as described in supplementary Figure 1.1

**Stathmin-STMN**



**Phylogenetic tree of STMN family.**

Neighbor-Joining tree of the STMN family members. Symbols and parameters are the same as described in supplementary Figure 1.1

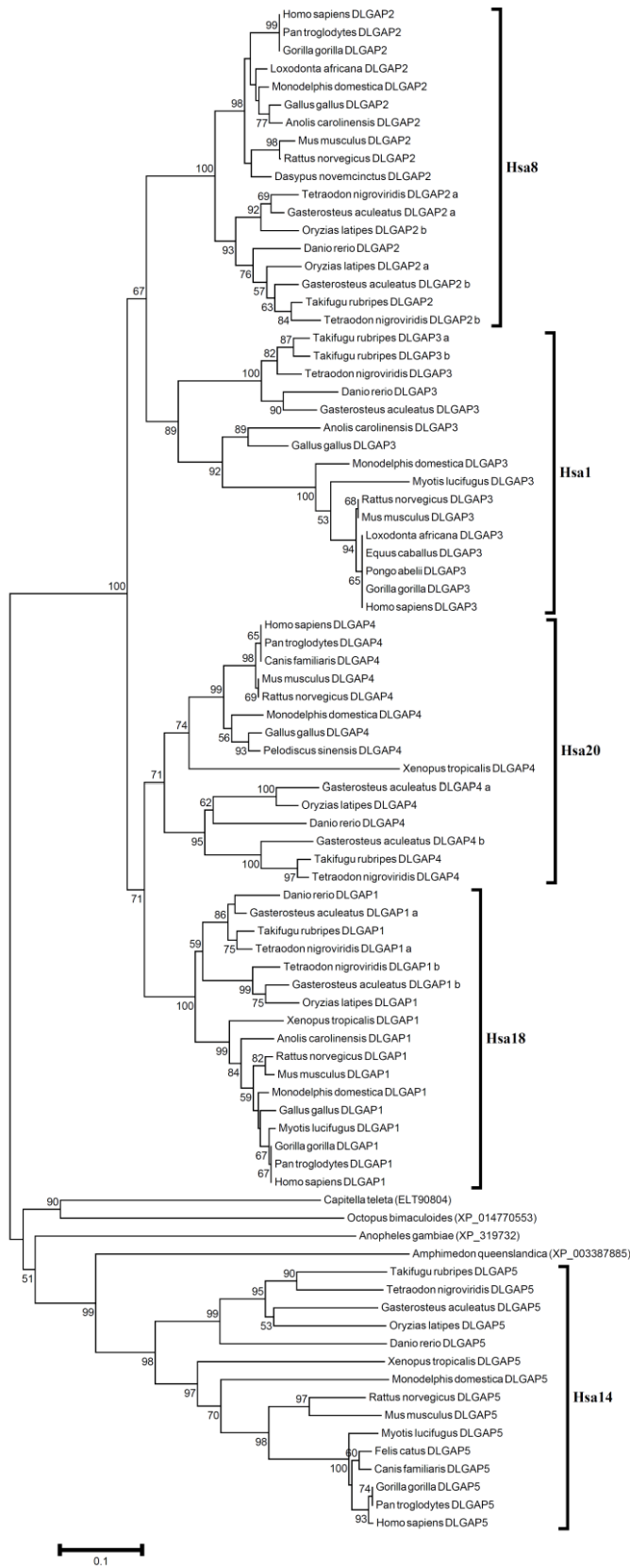
### **Co-duplicated group-3**

**HCK\*, DLGAP, NKAIN, KCNQ, MATN4\***

**Asterisks (\*)** represent families published previously by our research group (for details see main text).



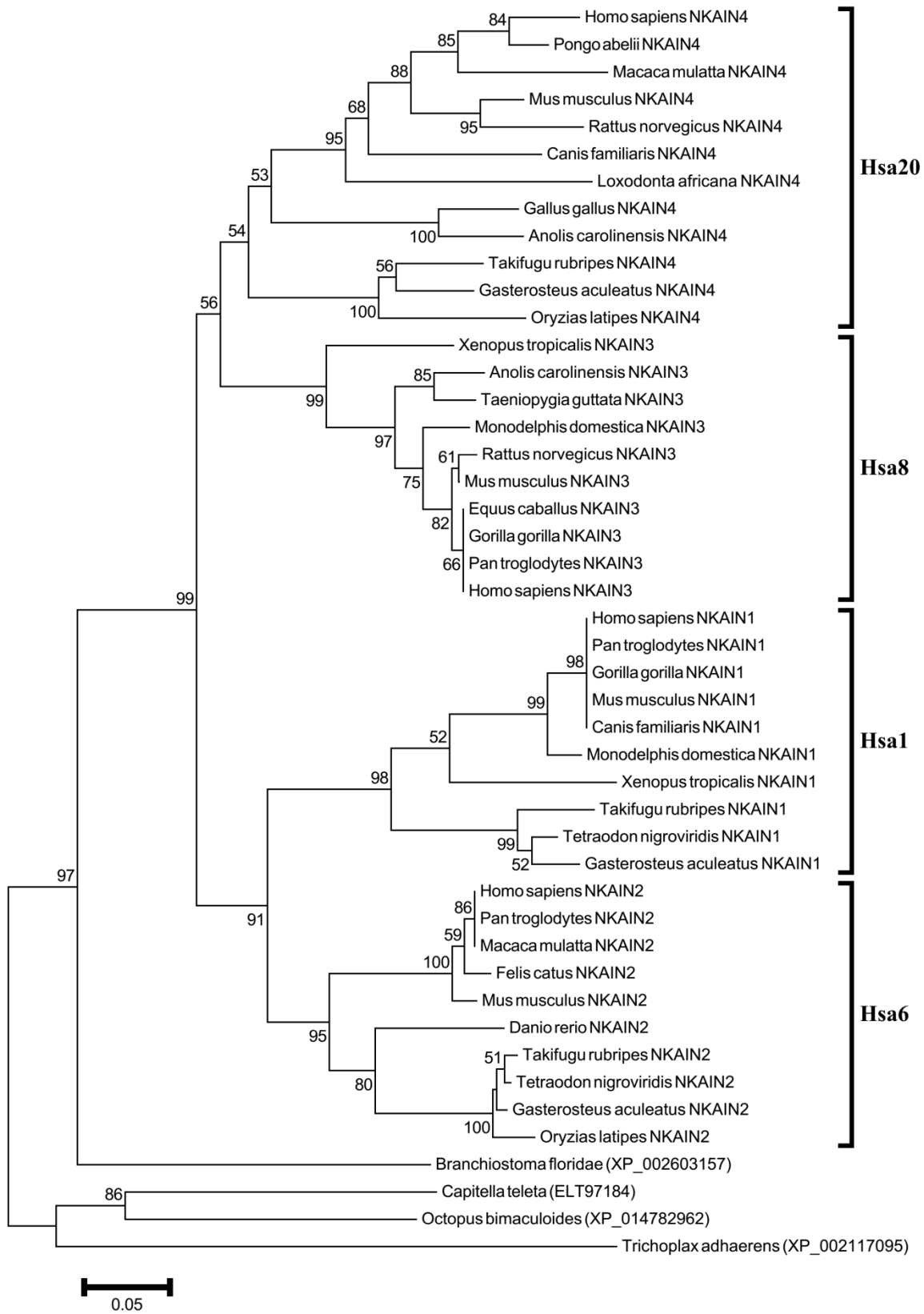
**Discs, large Drosophila Homolog-associated Protein-DLGAP**



**Phylogenetic tree of DLGAP family.**

Neighbor-Joining tree of the DLGAP family members. Symbols and parameters are the same as described in supplementary Figure 1.1

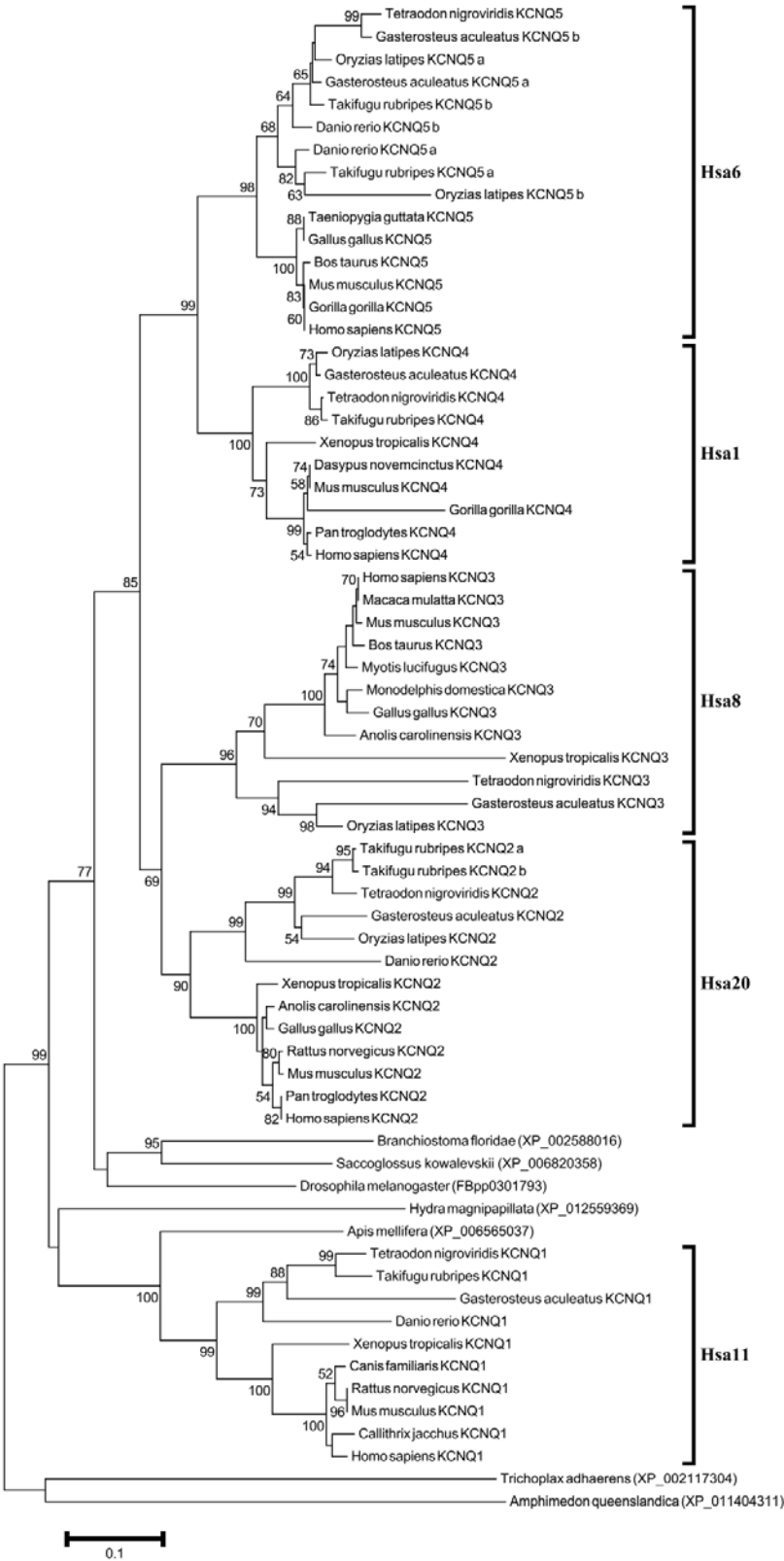
**Na<sup>+</sup>/K<sup>+</sup> Transporting ATPase Interacting Protein-NKAIN**



**Phylogenetic tree of NKAIN family.**

Neighbor-Joining tree of the NKAIN family members. Symbols and parameters are the same as described in supplementary Figure 1.1

**Potassium Voltage-Gated Channel subfamily Q-KCNQ**



**Phylogenetic tree of KCNQ family.**

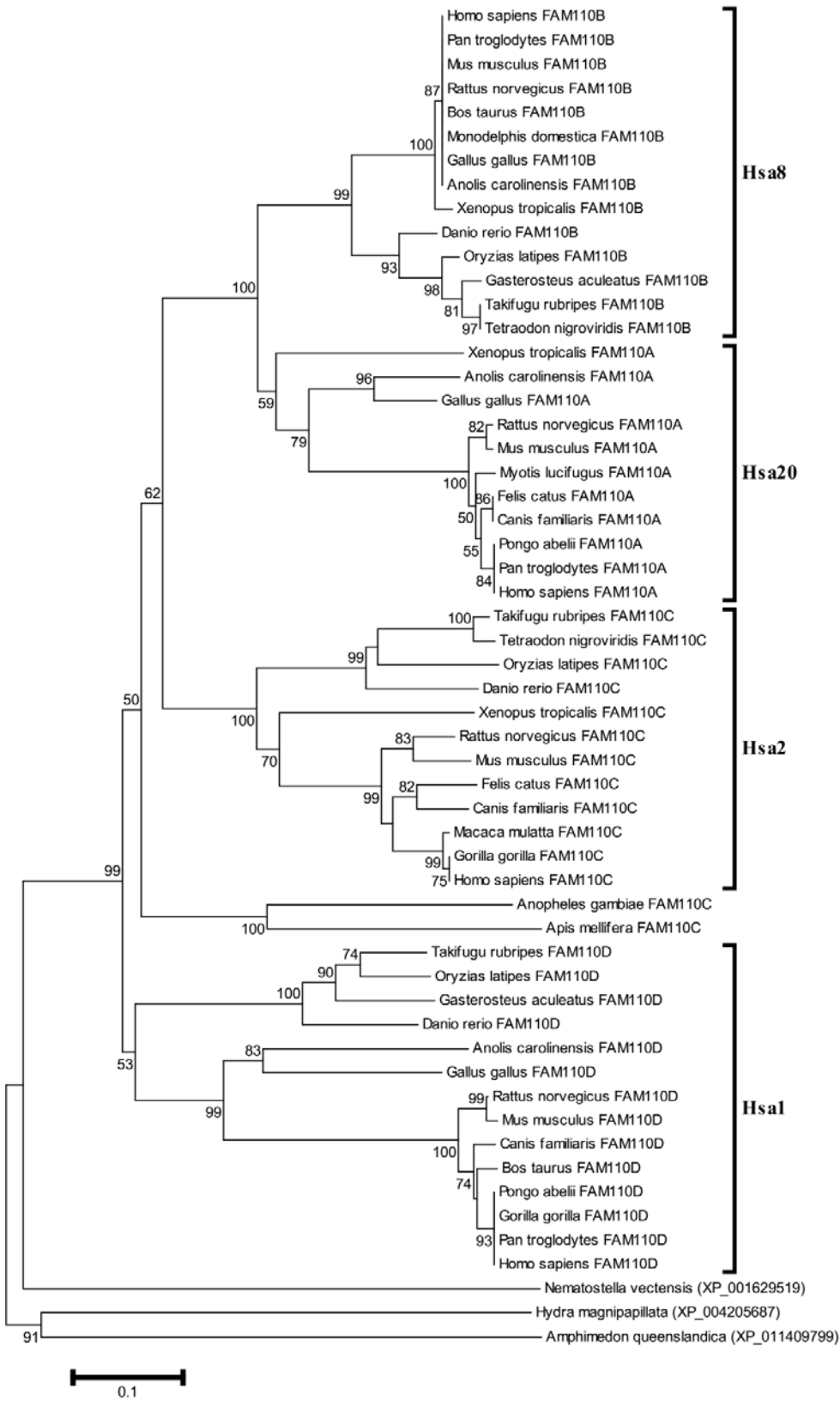
Neighbor-Joining tree of the KCNQ family members. Symbols and parameters are the same as described in supplementary Figure 1.1

## **Co-duplicated group-4**

**FAM110, NCOA, KCNS\*, YTHDF, XKR, MYT**

**Asterisks (\*)** represent families published previously by our research group (for details see main text).

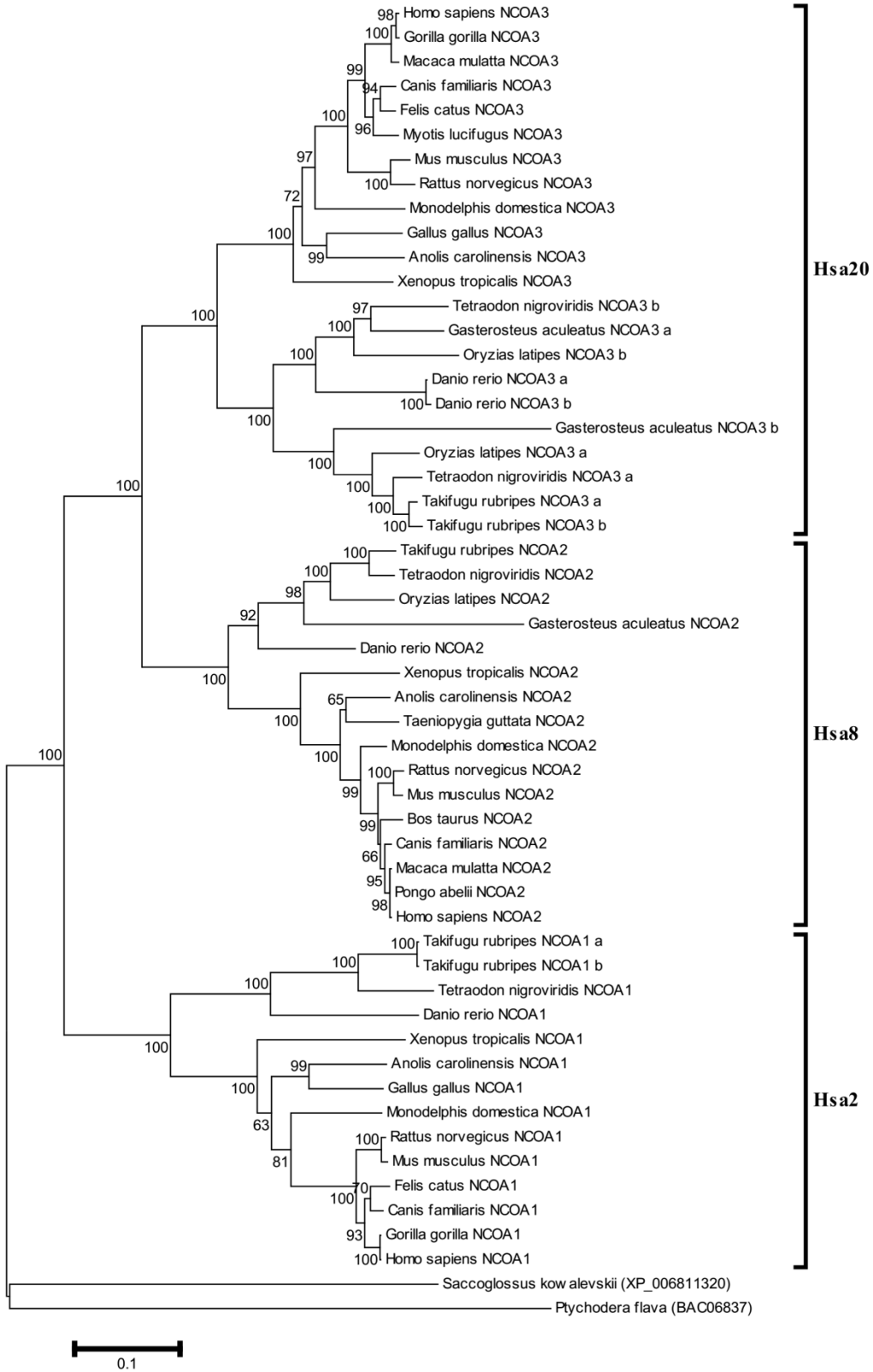
**Family with Sequence Similarity 110-FAM110**



**Phylogenetic tree of FAM110 family.**

Neighbor-Joining tree of the FAM110 family members. Symbols and parameters are the same as described in supplementary Figure 1.1

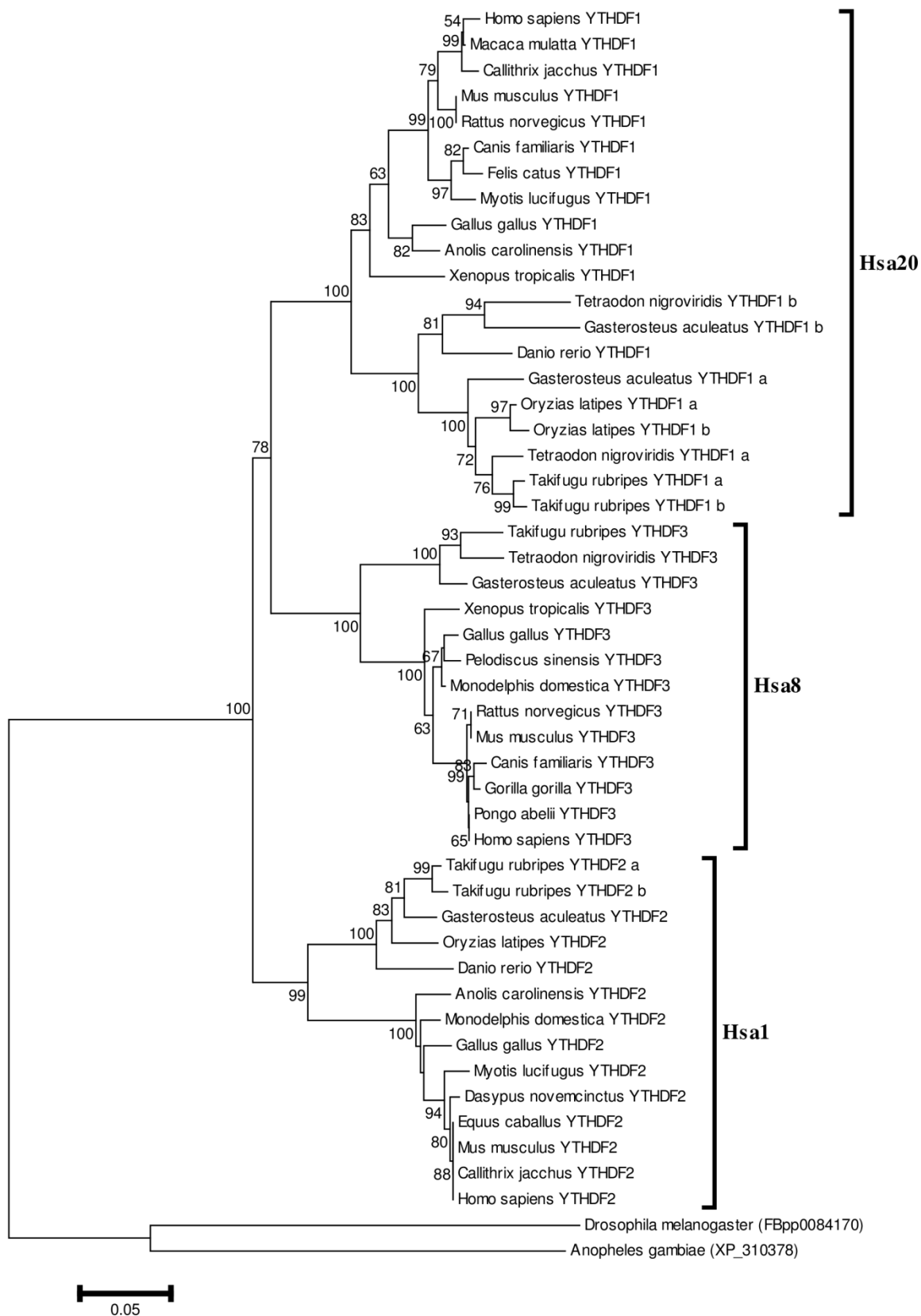
**Nuclear Receptor Coactivator-NCOA**



**Phylogenetic tree of NCOA family.**

Neighbor-Joining tree of the NCOA family members. Symbols and parameters are the same as described in supplementary Figure 1.1

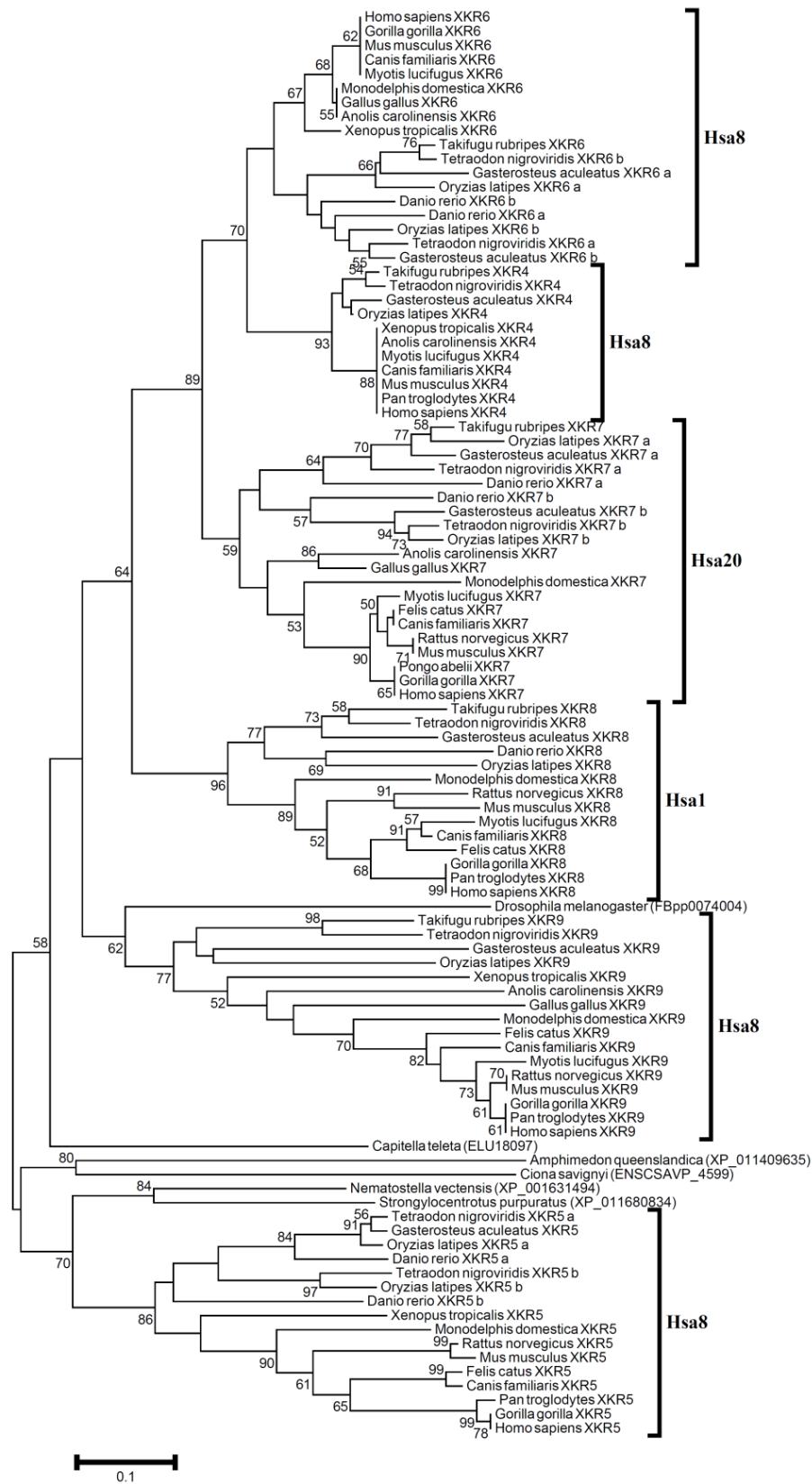
**YTH Domain-Containing Family Protein-YTHDF**



**Phylogenetic tree of YTHDF family.**

Neighbor-Joining tree of the YTHDF family members. Symbols and parameters are the same as described in supplementary Figure 1.1

**X Kell Blood Group Precursor-related Family-XKR**

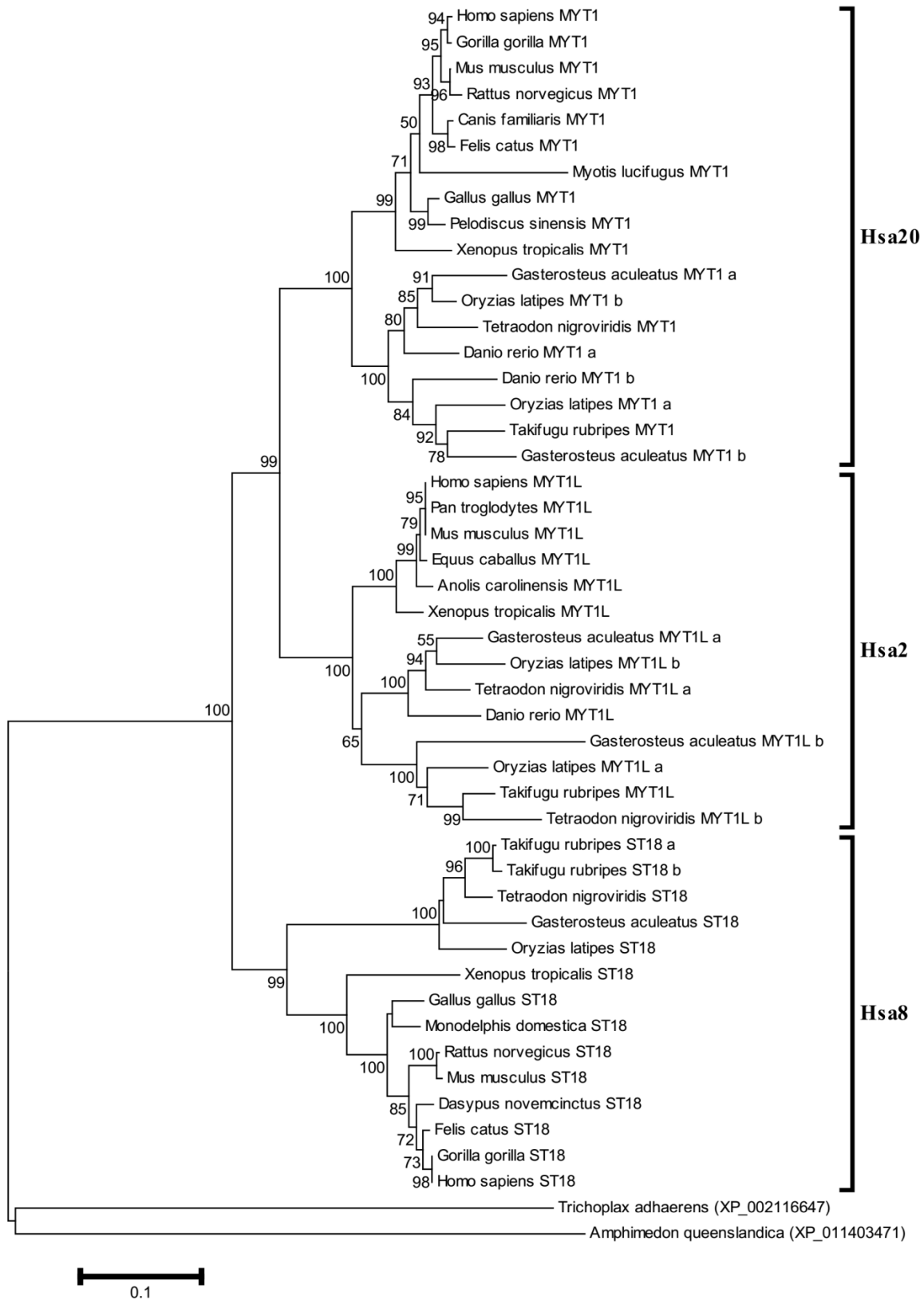


**Phylogenetic tree of XKR family.**

Neighbor-Joining tree of the XKR family members. Symbols and parameters are the same as described in supplementary Figure 1.1



**Myelin Transcription Factor-MYT**

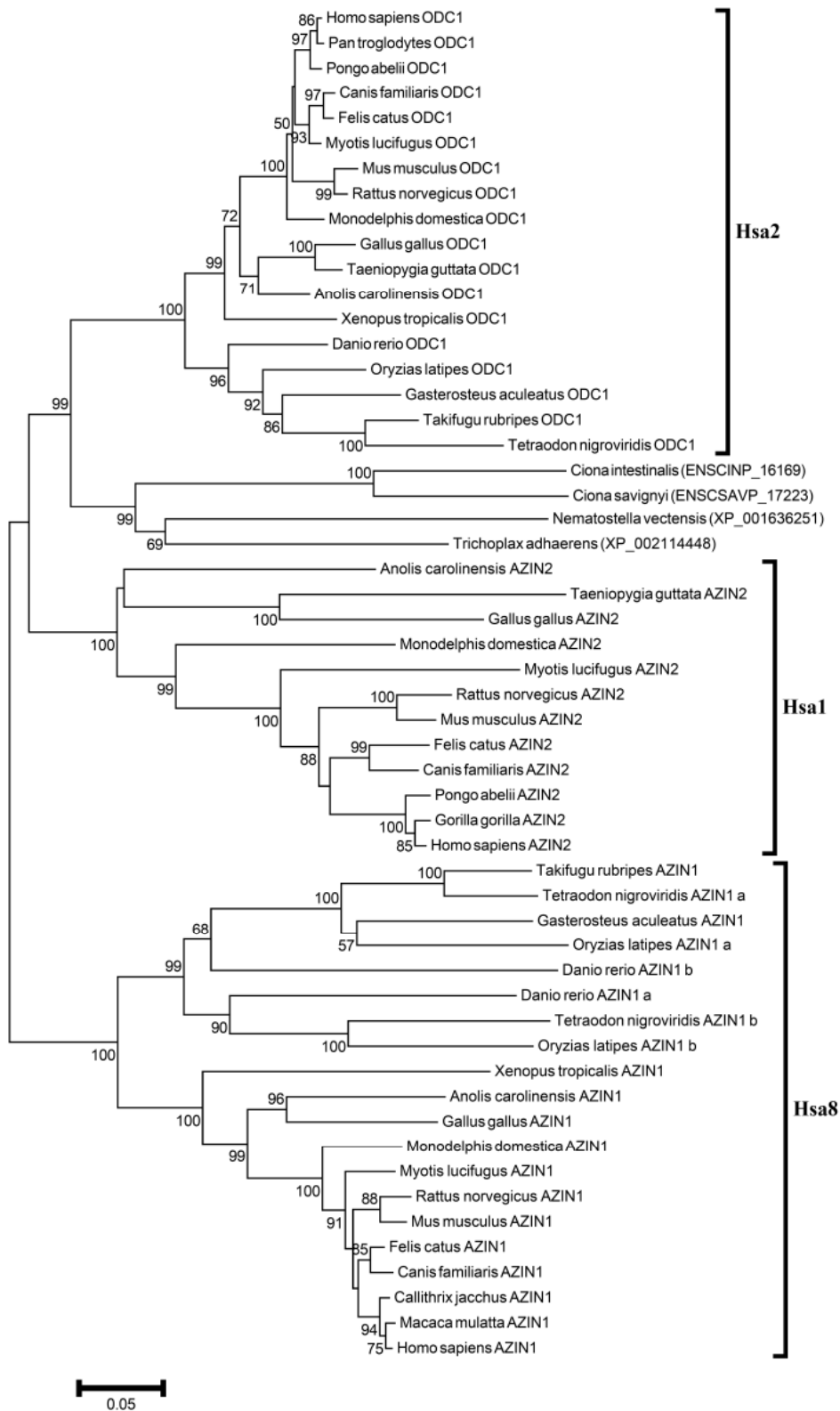


**Phylogenetic tree of MYT family.**

Neighbor-Joining tree of the MYT family members. Symbols and parameters are the same as described in supplementary Figure 1.1

**Other gene families analyzed in the present study**

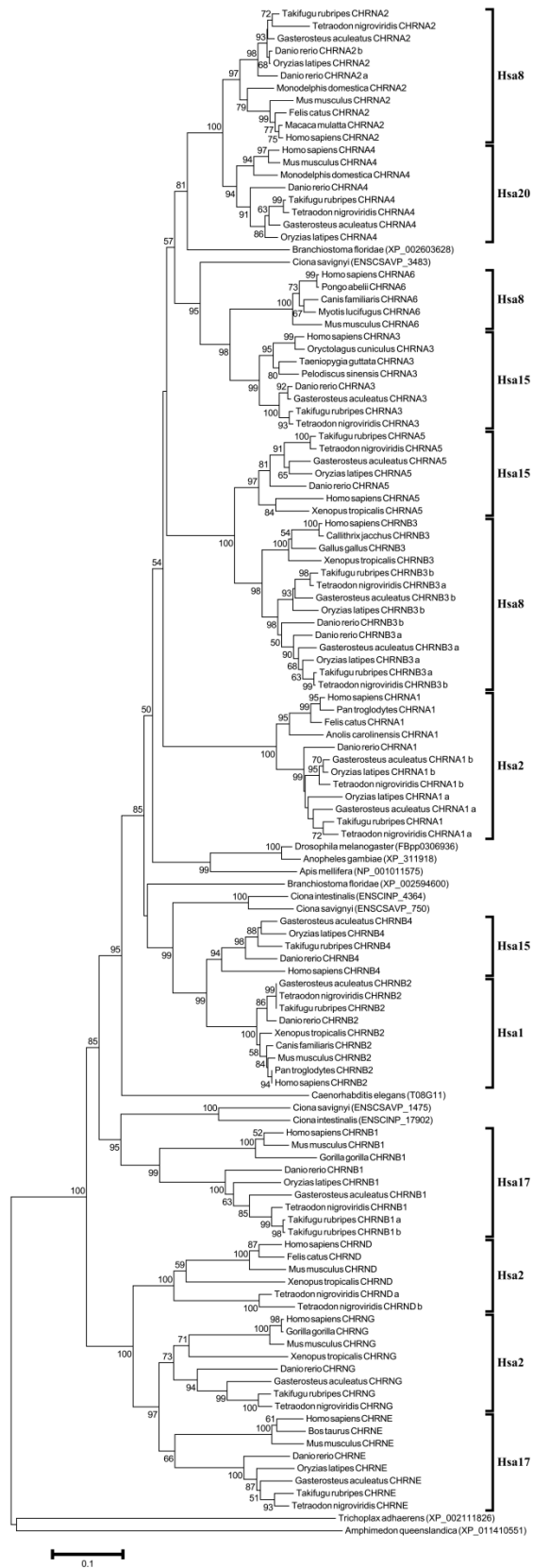
## Antizyme Inhibitor-AZIN



### Phylogenetic tree of AZIN family.

Neighbor-Joining tree of the AZIN family members. Uncorrected p-distance was used. Complete-deletion option was used. Numbers on branches represent bootstrap values (based on 1000 replications) supporting that branch; only the values  $\geq 50\%$  are presented here. Scale bar shows amino acid substitution per site.

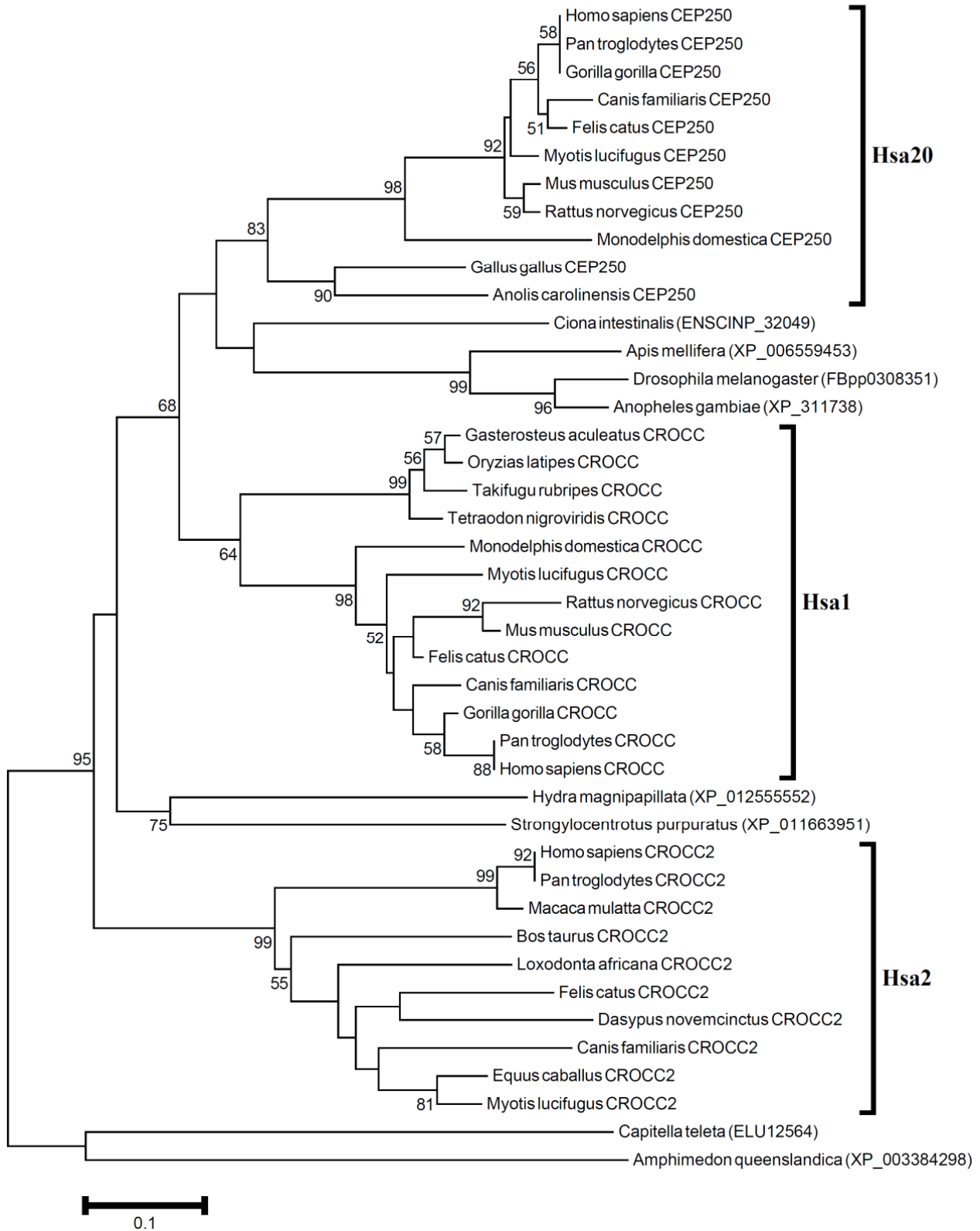
# Cholinergic Receptor Nicotinic Subunits-CHRN



**Phylogenetic tree of CHRN family.**

Neighbor-Joining tree of the CHRN family members. Symbols and parameters are the same as described in supplementary Figure 1.1

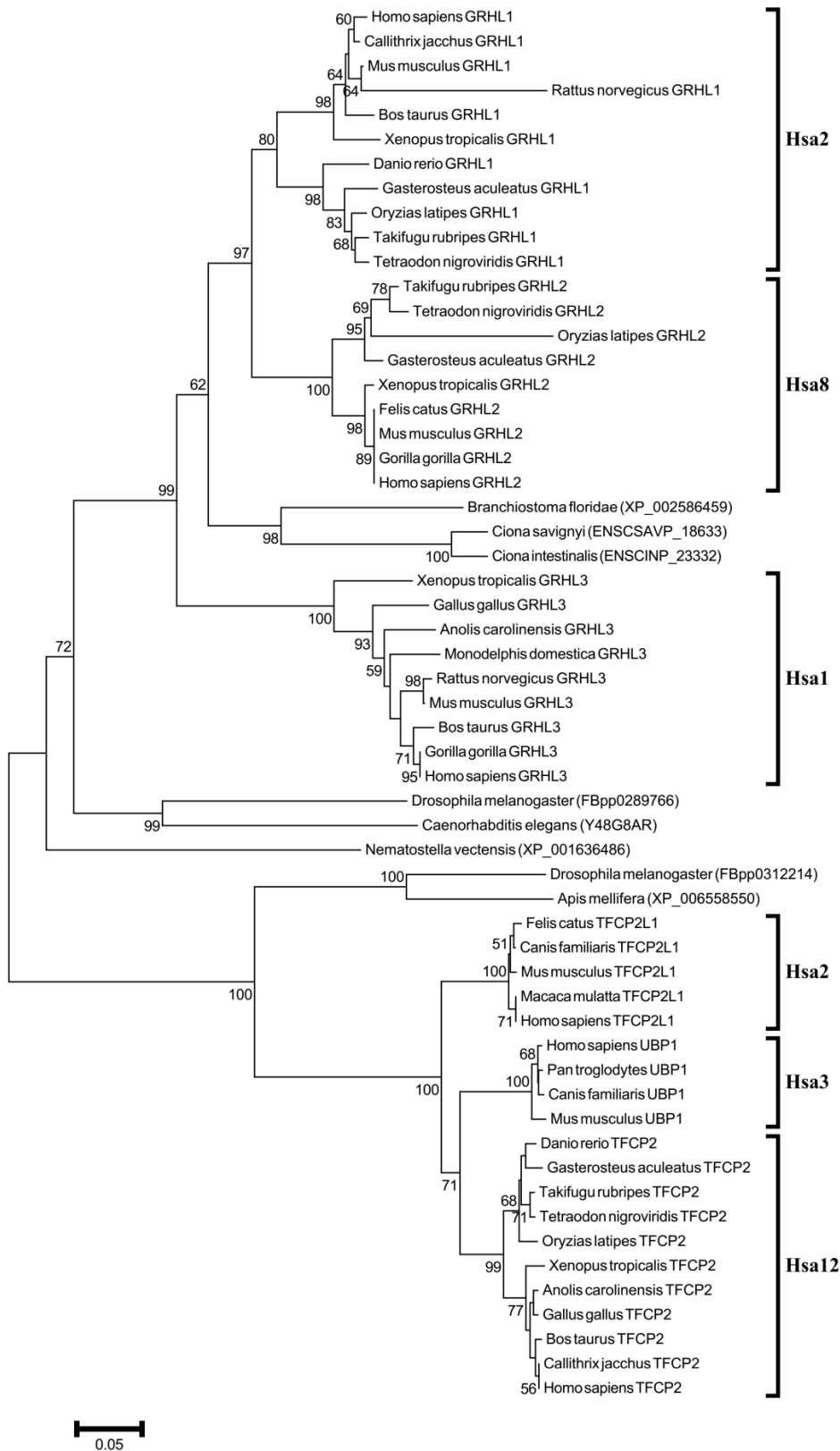
**Ciliary Rootlet Coiled-Coil Protein-CRO**



**Phylogenetic tree of CRO family.**

Neighbor-Joining tree of the CRO family members. Symbols and parameters are the same as described in supplementary Figure 1.1

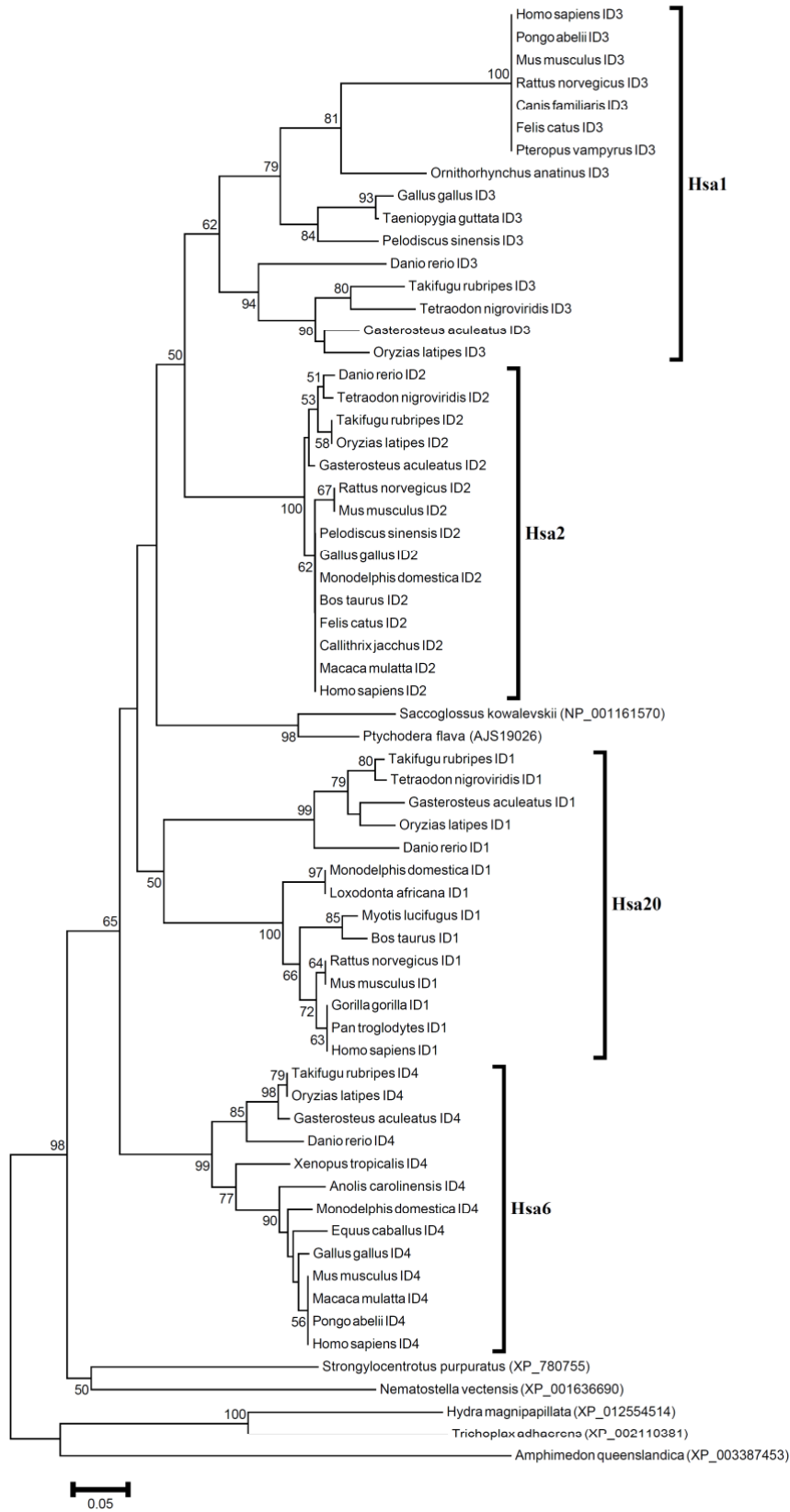
**Grainyhead like Transcription factor-GRHL**



**Phylogenetic tree of GRHL family.**

Neighbor-Joining tree of the GRHL family members. Symbols and parameters are the same as described in supplementary Figure 1.1

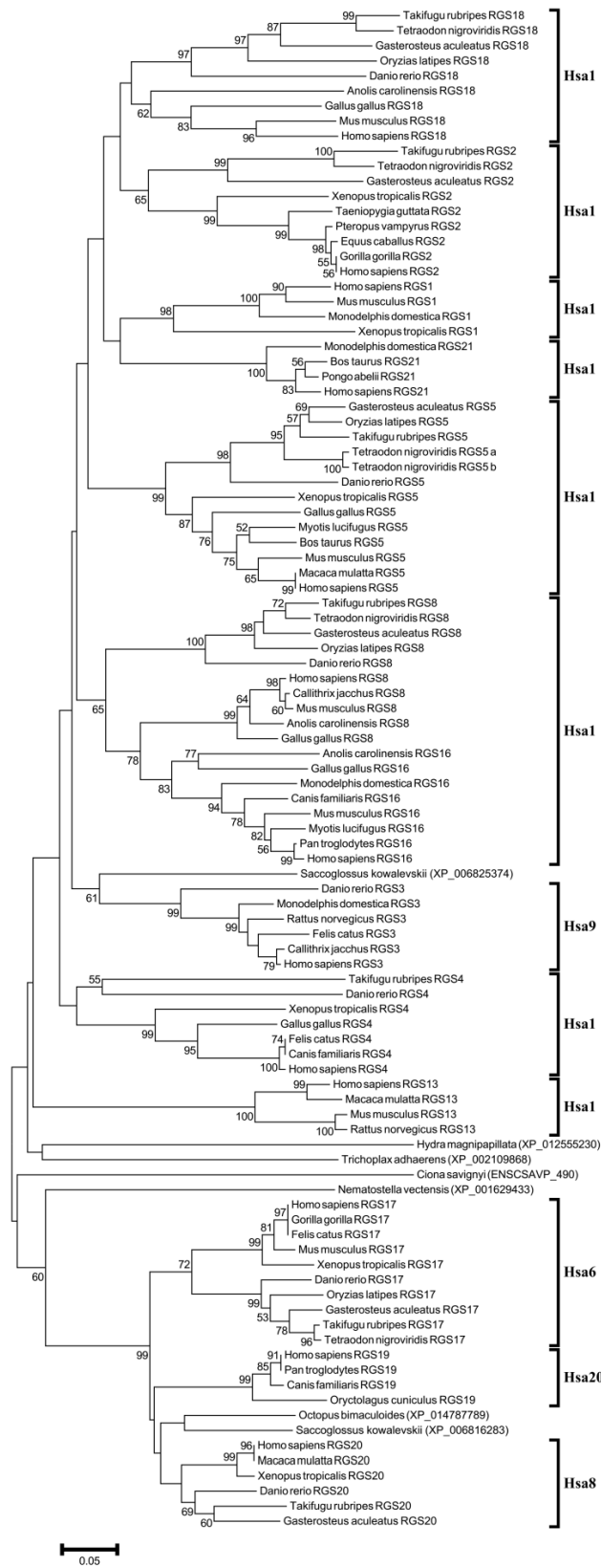
# Inhibitor of DNA Binding protein-ID



## Phylogenetic tree of ID family.

Neighbor-Joining tree of the ID family members. Symbols and parameters are the same as described in supplementary Figure 1.1

# Regulator of G-protein Signaling-RGS

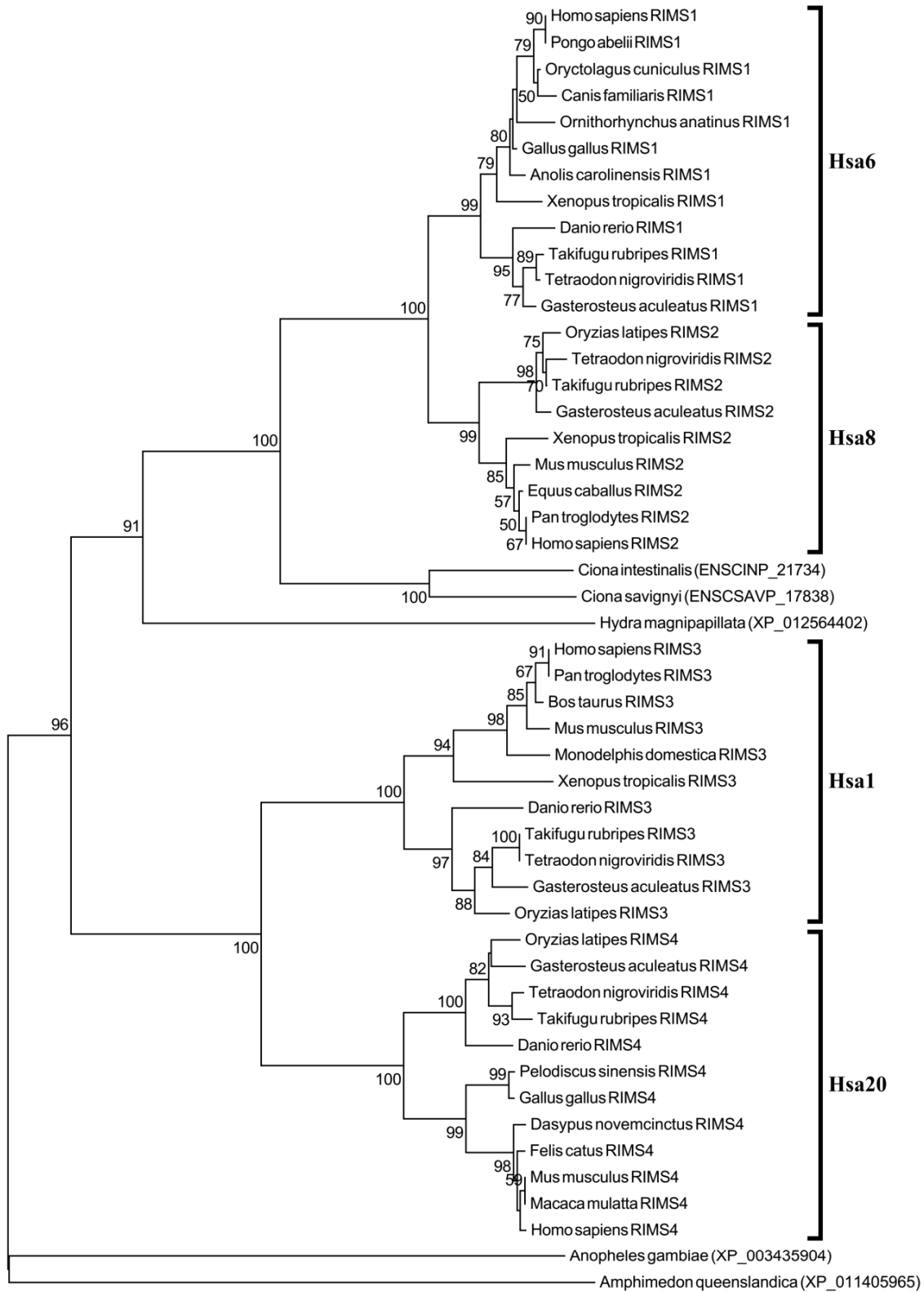


**Phylogenetic tree of RGS family.**

Neighbor-Joining tree of the RGS family members. Symbols and parameters are the same as described in supplementary Figure 1.1



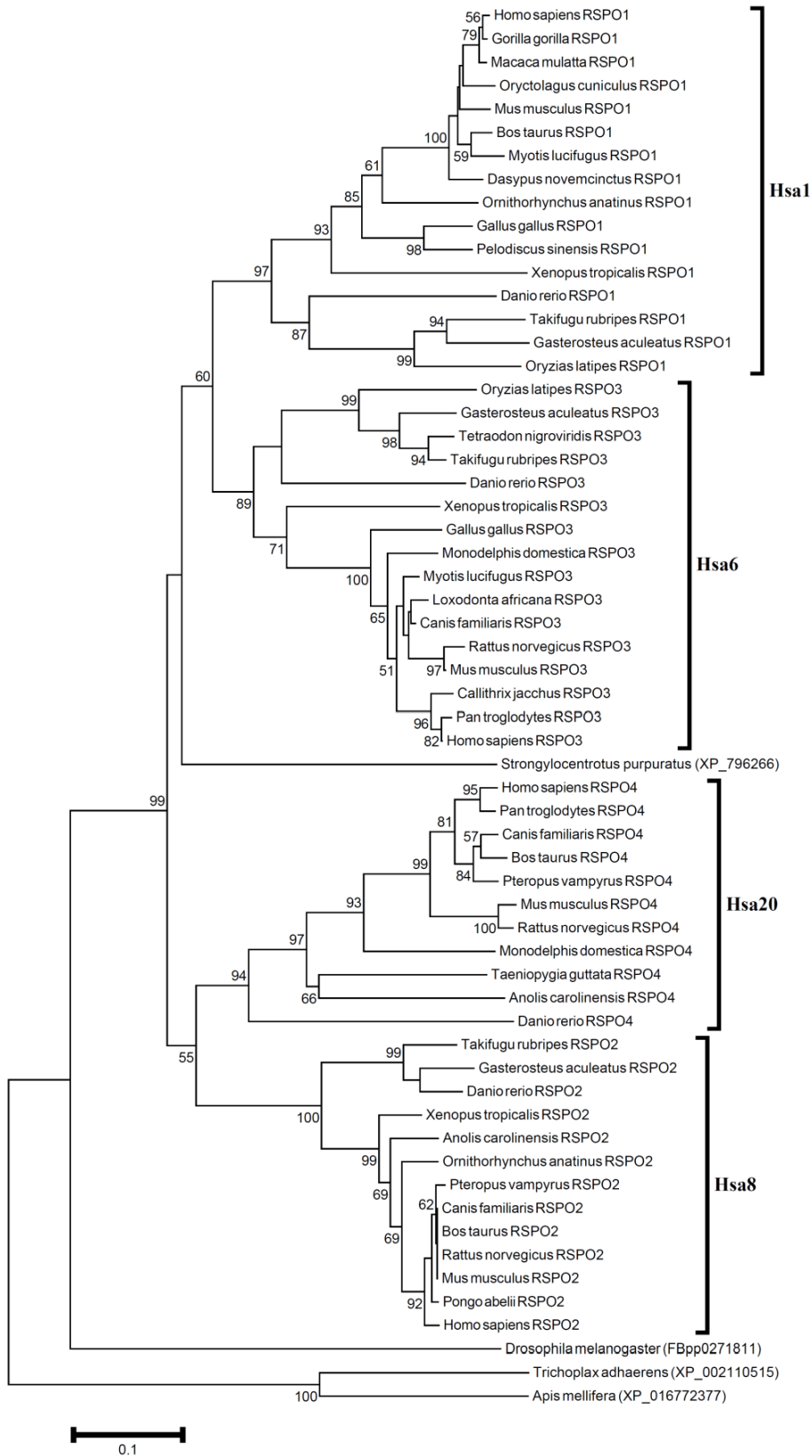
**Regulating Synaptic Membrane Exocytosis Protein -RIMS**



**Phylogenetic tree of RIMS family.**

Neighbor-Joining tree of the RIMS family members. Symbols and parameters are the same as described in supplementary Figure 1.1

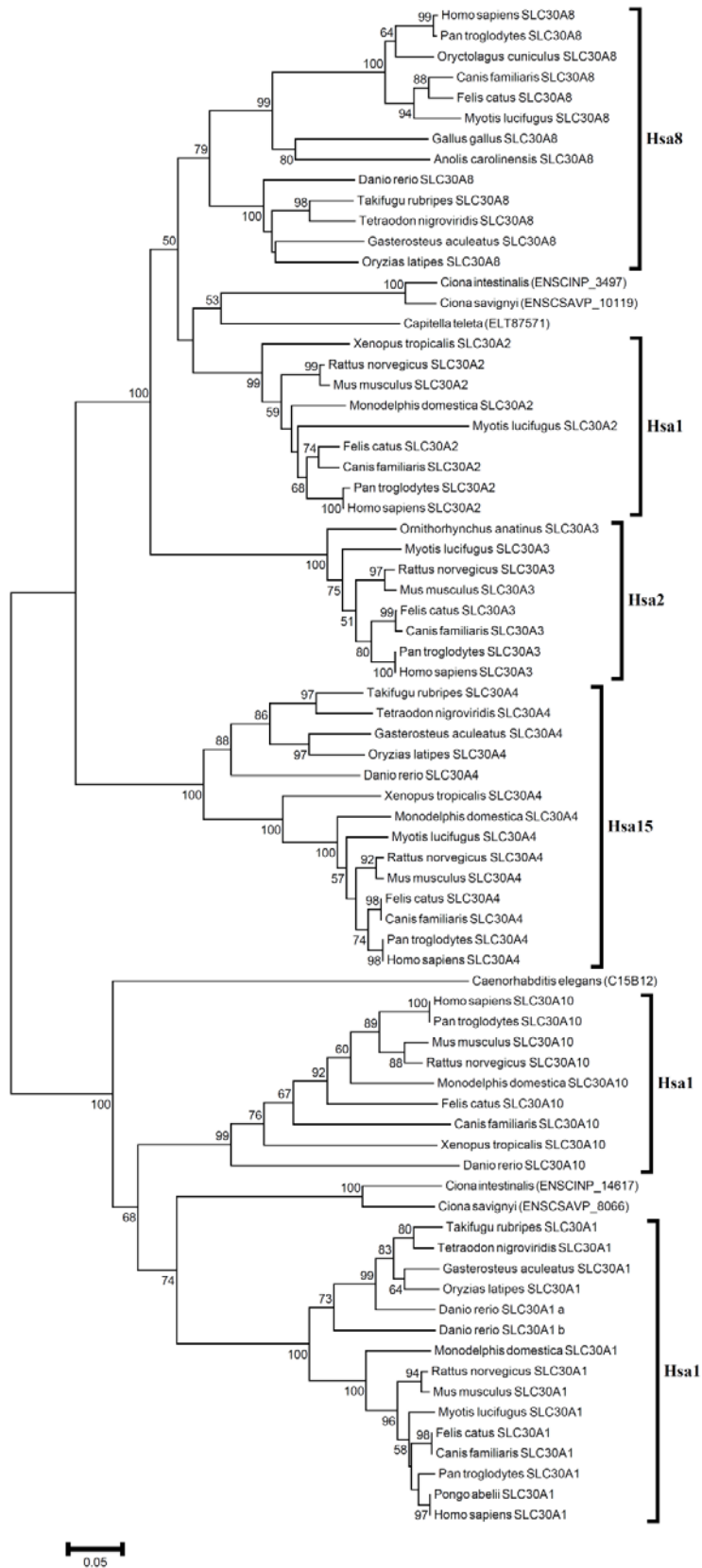
**R-Spondin Homolog-RSPO**



**Phylogenetic tree of RSPO family.**

Neighbor-Joining tree of the RSPO family members. Symbols and parameters are the same as described in supplementary Figure 1.1

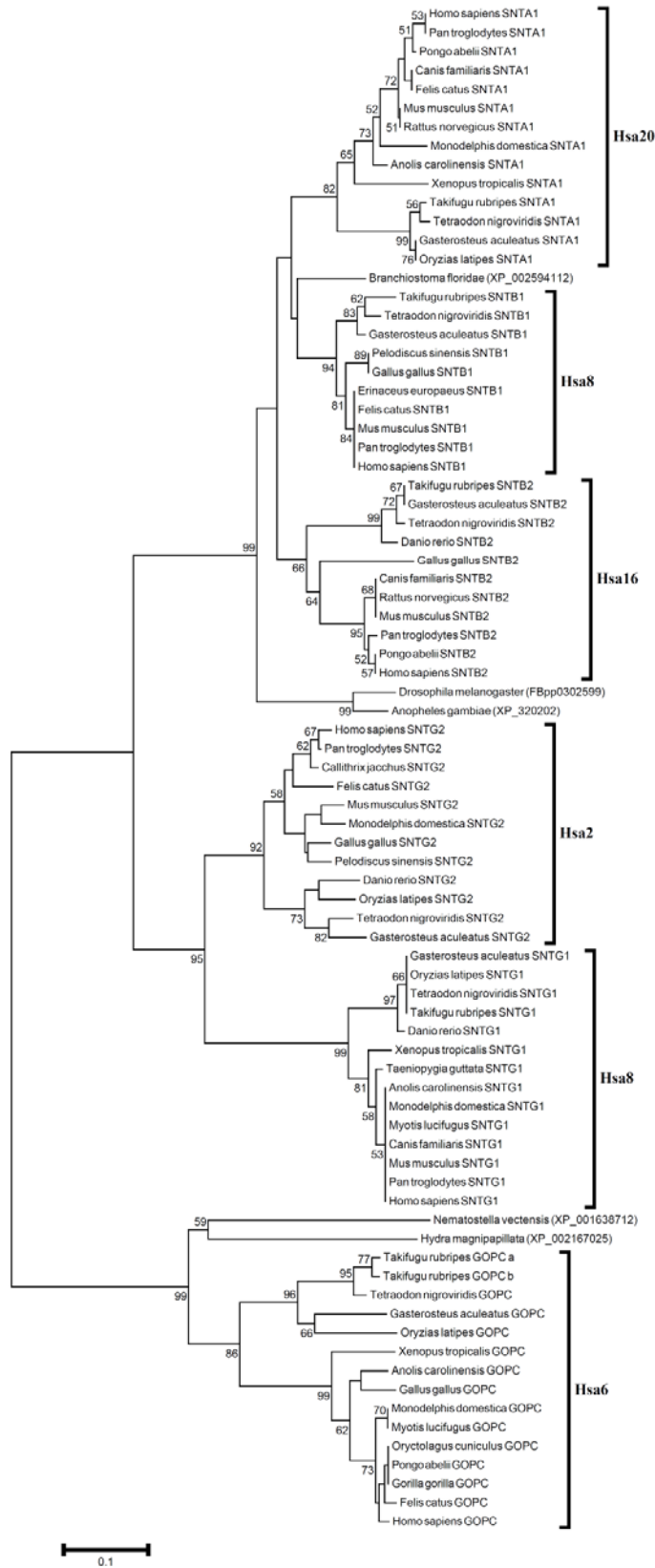
**Solute Carrier Family-SLC**



**Phylogenetic tree of SLC family.**

Neighbor-Joining tree of the SLC family members. Symbols and parameters are the same as described in supplementary Figure 1.1

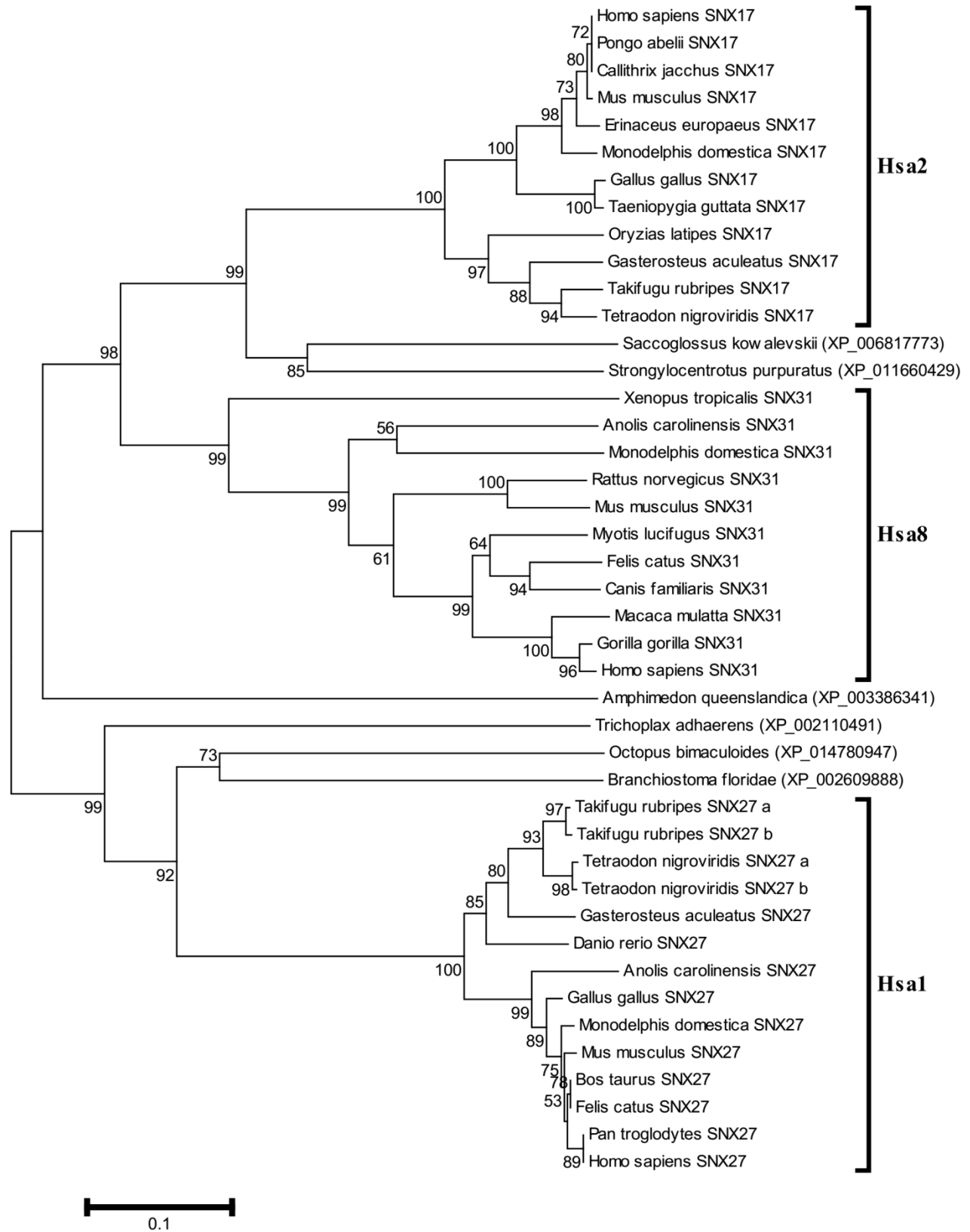
# Syntrophin, Gamma-SNT



**Phylogenetic tree of SNT family.**

Neighbor-Joining tree of the SNT family members. Symbols and parameters are the same as described in supplementary Figure 1.1

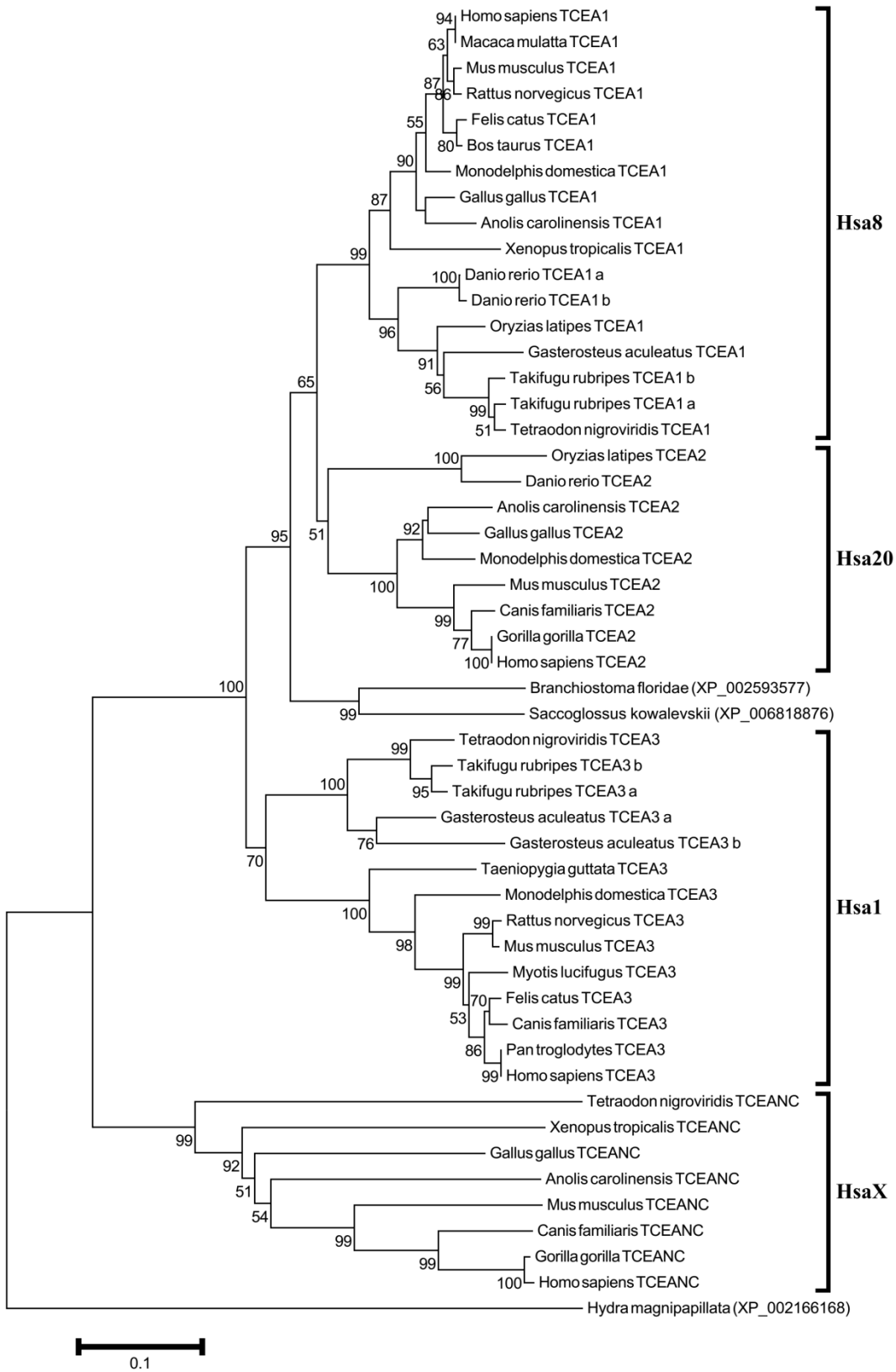
**Sorting Nexin Family-SNX**



**Phylogenetic tree of SNX family.**

Neighbor-Joining tree of the SNX family members. Symbols and parameters are the same as described in supplementary Figure 1.1

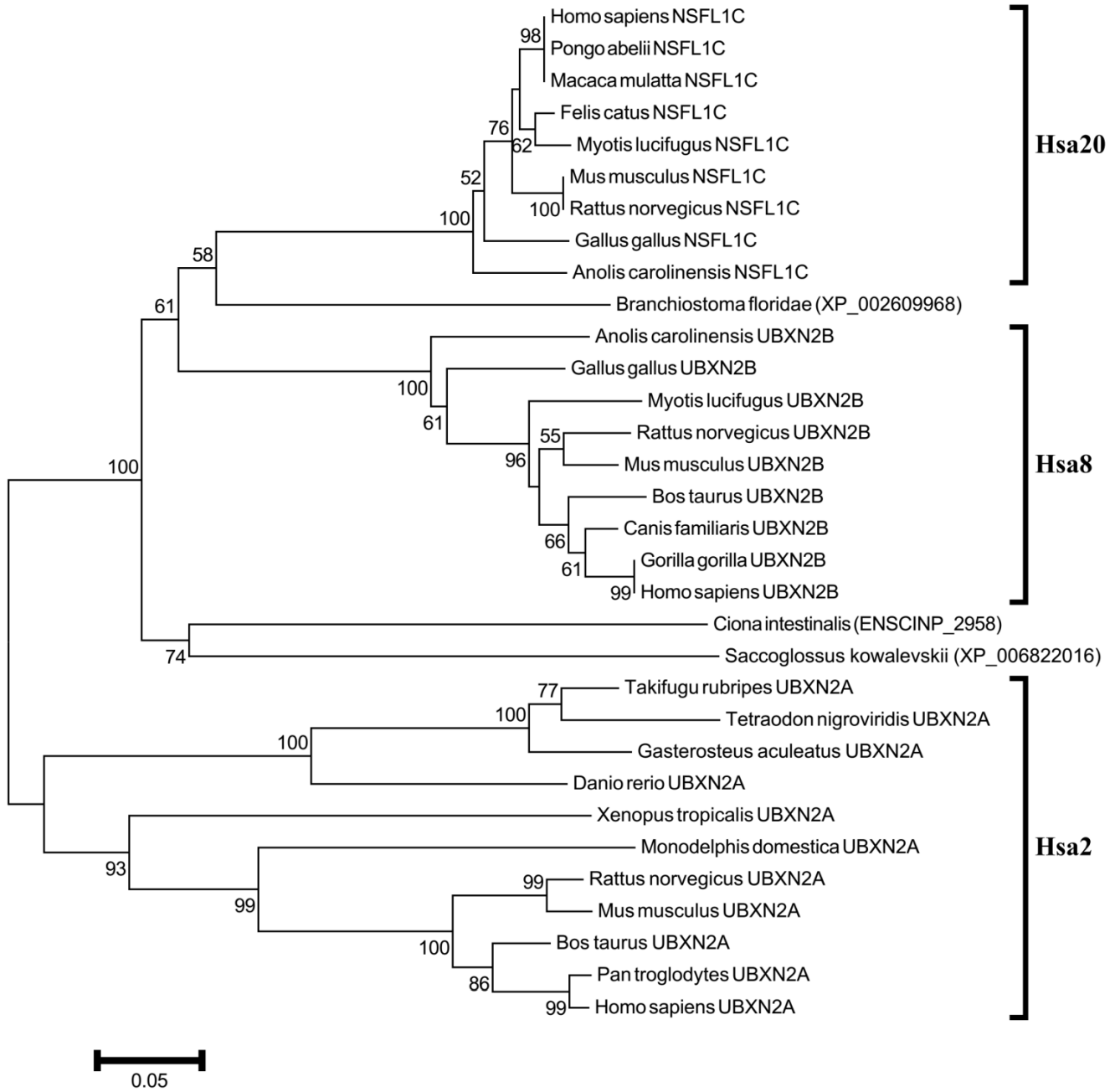
**Transcription Elongation factor A (SII) Protein-TCEA**



**Phylogenetic tree of TCEA family.**

Neighbor-Joining tree of the TCEA family members. Symbols and parameters are the same as described in supplementary Figure 1.1

**UBX Domain-Containing Protein-UBXN**



**Phylogenetic tree of UBXN family.**

Neighbor-Joining tree of the UBXN family members. Symbols and parameters are the same as described in supplementary Figure 1.1