

		100
Xtropicalissyt16var2	MVQPMASQ--RFFQPVSSWISRMCEAVSLAGDSISGSLNNLNK--AQPSVDSKQDSQEYQEEFHYHIEDFPEENPCSSDNDDFENVNNVVTSEYNEANGQAL--VTSNDNTESPGCVGSS	
Xtropicalissyt16var3	-----	
Acarolinensissyt16var2	---MASQDVVNFFQPFSSWVSQFFLEALQEAGDTISSSFTSLGN--RAIEDGDGDKLENSDGSYEHHSSEGSNDNESTFSQDSEESDLFPSSCHDELSSSSA--GPYWYEGKRIHPQEE	
GallussyT16var2	---MTSEAAQSLFQPLSSWLSQLYEAIQQAGDSISASLLNLNGVGRESEEDRNRGLGENGVAYEDYSVESDERHIDLWDEEYICPREDHGHIAGRDLASALPCGSDMGMRQKRVKNT	
TguttatasyT16var2	---MASEAPQNFLQPLSSWMSQIYEAIQQAGDSISASLLNLSCVGRKPEPERTQDLENNGGVYEDYSEESGERDLWDWEDYFYPREDSYIGGPGLASQNLPHSSDTGPQRQNRVKTT	
MdomesticaSyT16var2	MVLTMASQDTONFFQQLSSWISRVYEAVQQVGD TLSASIVNLSK--HNPQFNGELDPFLIDGDVQE---SDLQDGEKQNHAIKDDMEPLLLLANQFPTGTY--NTDLGDMKQSP---	
MmusculusSyT16var2	MVLTMASQDQVNFFQPLSSWLSRVYEALQQAGDALASISLVLSK--HDSALSDKPEQDLDAAIQQ---TYLED-EEQDHDGSPEEASSLFL EEDHFSLSNS--DLQDSVQTASPTLGQ	
MmusculusSyT16var3	-----	
HsapiensSyT16var1	MVLAMASQDVQNFFQPFSSWISRVYEALQQAGDMLSASLVNISK--QDSKLSDKLDQDLDNIIQIE---TYFED-EEQDNDWSQEDANSFL EVDHFSFCCNS--DLQDSAQNSSPSLSQ	
HsapiensSyT16var2a	MVLAMASQDVQNFFQPFSSWISRVYEALQQAGDMLSASLVNISK--QDSKLSDKLDQDLDNIIQIE---TYFED-EEQDNDWSQEDANSFL EVDHFSFCCNS--DLQDSAQNSSPSLSQ	
HsapiensSyT16var2b	-----	
HsapiensSyT16var3	-----	

[illegible]

Xropicalissytl6var2
 Xropicalissytl6var3
 Acarolinensissytl6var2
 GallussYt16var2
 TguttataSYt16var2
 MdomesticaSYt16var2
 MmusculusYt16var2
 MmusculusYt16var3
 HsapiensSYt16var1
 HsapiensSYt16var2a
 HsapiensSYt16var2b
 HsapiensSYt16var3

FRSTVSEKATQAGSESRQKFSRLLSNHEELSTEASECEDLDVLCYQSN--EDDHVSYSR--QELAATEHKNATGOEADARPG-----
 FRSGVSEKGTQAGLERRPKFNRLLSNHEEYSSEISECEGILIRNVLRGTGKREMYLDGFSQLSYQDNLSEHDDRLSFDSRTASESRGSGQTKDPEMEVGAKPSLRQETEGSLEMETA
 FDQKYLNK---VGVGCSPKFSHPFCSHKEHRTFVSRCDLDGLSLSYQDNLSCHEDDHVSVDSTTTER-RSAGQHTGPRMESSIADGFSQQATEGRLELEAA
 FRSGPYEKGTQASSERKPKLKHLLSSHENSTEASECEDLDGLSQPRCLNNVSYGEDDHNSVDSRITSESRDFGEQRTNRRFAIFTHSFGEETATGRNLETETS
 FRSGVSEKGTTELEQKIKCKRLLCTHQEDSAEGSACEDLDRTSLSYSEILSY-EDRPISILPQSPFESRNVHHGPCRPFMGMVRSLGRPCADGVLETETA
 FRSGVSEKGTTELEQKIKCKRLLCTHQEDSAEGSACEDLDRTSLSYSEILSY-EDRPISILPQSPFESRNVHHGPCRPFMGMVRSLGRPCADGVLETETA
 FRSVTSEKKGQTGLEQKPKFSRSLTLHGEDGTEVSACEDLDGASQRRYSSENLSYGEDDHIPAHSQSPCERGDAKHHGTSHQESSVVQSLRRQSTEGSLEMETA
 FRSVTSEKKGQTGLEQKPKFSRSLTLHGEDGTEVSACEDLDGASQRRYSSENLSYGEDDHIPAHSQSPCERGDAKHHGTSHQESSVVQSLRRQSTEGSLEMETA
 -----META

400

Xtropicalissyt16var2	VNNDGFEDQDATDSSSVCSPEPQAESTI--TPVPYVPISKCGDLDTVLEYKPPSSQKLTVTVLEAKDIPDKERSGVDSWQVHLVVLPSKKQRGKTTTQKGSPLPVNFTFTFNK
Xtropicalissyt16var3	-----
Acarolinensissyt16var2	FSNQGFEMNDATDSSSAWTEPEHEGANVLPAPHSPPREPICKCGDLDDIFYRPSQKLLVTVLEAKDIPDKDRSGVSTWQVHVLMPSKKQRGKTSVQRGSPAFKDKVFTFK
GallussYT16var2	FTNQGFEGENDATDSSSAWSPETEDEVNSEPAHHSAAHQPICKCGDLDVIFYSKASSQKLVTVLEARDIPDKDRSGVNTWQVHTVLMPSKKQRGKTRVQRGPIPMFKNDITFSK
TguttataSYT16var2	FVNQGLEVNDAATDSSSAWSEPEHNEVNSAPAHKCAHEPICKCGDLDVIFYKPPSSQKLIATVLAARDIPDKDRSGVNTWQVHAVLMPGKKQRGKTSVQRGPITPFQDKITFSK
MdomesticaSYt16var2	FSNPGFEEPYSTDTSSAWSPEEQDGLKVPHFPSSAPEPICKCGDLDVIFYENSSSQKLAVTIVKAQNVDPDKDRSGVNAWQVHTVLLPRKKQRGKTSVQRGPTPVFKEKVFFSK
MmusculusSYt16var2	FVSRGFEDSYATHSSSLWSPEEQDGTSL-QVPHRLLEPICKCGDLDVIFYRAVTKLTVTIVRAQGLPDKDRSGVNSWQVHIVLLPSKKQRGKTNIQRGPNPVFKEKVTFSK
MmusculusSYt16var3	FVSRGFEDSYATHSSSLWSPEEQDGTSL-QVPHRLLEPICKCGDLDVIFYRAVTKLTVTIVRAQGLPDKDRSGVNSWQVHIVLLPSKKQRGKTNIQRGPNPVFKEKVTFSK
HsapiensSYT16var1	FNSRGFEDSYATDSSMWSPEEQDRTNL-QVPSGVSEPIICKCGDLDVIFYRAASKLTVTIVRAQGLPDKDRSGVNSWQVHVLLPGKKHRRGRNTNIQRGPNPVFKEKVTFAK
HsapiensSYT16var2a	● FNSRGFEDSYATDSSMWSPEANLNK-----RKGYLLDVYCLSSPLLFTTSLHRRNRRTGPICRCHPGSQSPSQSVVT-----
HsapiensSYT16var2b	-----
HsapiensSYT16var3	FNSRGFEDSYATDSSMWSPEEQDRTNL-QVPSGVSEPIICKCGDLDVIFYRAASKLTVTIVRAQGLPDKDRSGVNSWQVHVLLPGKKHRRGRNTNIQRGPNPVFKEKVTFAK

Figure 1 displays a phylogenetic tree and the corresponding protein alignment of the 16S rRNA gene. The tree on the left shows the relationships between various species, with bootstrap values at the nodes. The alignment on the right shows the amino acid sequence of the 16S rRNA gene for each species, with positions 500 and 600 marked. The alignment is color-coded by amino acid type: A (green), C (blue), G (red), T (orange), and N (purple).

Species and Bootstrap Values:

- Xtropicalissy16var2 (100)
- Xtropicalissy16var3 (100)
- Acarolinensissy16var2 (100)
- GgallusSYT16var2 (100)
- TguttataSYT16var2 (100)
- MdomesticaSYT16var2 (100)
- MmusculusSYT16var2 (100)
- MmusculusSYT16var3 (100)
- HsapiensSYT16var1 (100)
- HsapiensSYT16var2a (100)
- HsapiensSYT16var2b (100)
- HsapiensSYT16var3 (100)

Protein Alignment (Amino Acid Sequence):

Position 500: LVPEEMP... (Xtropicalissy16var2) to LEPRDVAA... (HsapiensSYT16var3)

Position 600: AINRPP... (Xtropicalissy16var2) to AVNRAP... (HsapiensSYT16var3)