

# Supplementary Figure 2: Strict Evolutionary Conservation of $\beta$ -tubulin.

<i>H. sapiens</i>	1	MREIVHIAQCCGQNIQAKFVEVISEDEIGDPTGSYHGDSDLQLERINVYTNATGNKYVPRAILVLDLEPGTMSVRSQFGIIFRPDNVYVQSGAGNN
<i>R. norvegicus</i>	1	MREIVHIAQCCGQNIQAKFVEVISEDEIGDPTGSYHGDSDLQLERINVYTNATGNKYVPRAILVLDLEPGTMSVRSQFGIIFRPDNVYVQSGAGNN
<i>M. musculus</i>	1	MREIVHIAQCCGQNIQAKFVEVISEDEIGDPTGSYHGDSDLQLERINVYTNATGNKYVPRAILVLDLEPGTMSVRSQFGIIFRPDNVYVQSGAGNN
<i>B. taurus</i>	1	MREIVHIAQCCGQNIQAKFVEVISEDEIGDPTGSYHGDSDLQLERINVYTNATGNKYVPRAILVLDLEPGTMSVRSQFGIIFRPDNVYVQSGAGNN
<i>G. gallus</i>	1	MREIVHIAQCCGQNIQAKFVEVISEDEIGDPTGSYHGDSDLQLERINVYTNATGNKYVPRAILVLDLEPGTMSVRSQFGIIFRPDNVYVQSGAGNN
<i>X. tropicalis</i>	1	MREIVHIAQCCGQNIQAKFVEVISEDEIGDPTGSYHGDSDLQLERINVYTNATGNKYVPRAILVLDLEPGTMSVRSQFGIIFRPDNVYVQSGAGNN
<i>D. rerio</i>	1	MREIVHIAQCCGQNIQAKFVEVISEDEIGDPTGSYHGDSDLQLERINVYTNATGNKYVPRAILVLDLEPGTMSVRSQFGIIFRPDNVYVQSGAGNN
<i>D. melanogaster</i>	1	MREIVHIAQCCGQNIQAKFVEVISEDEIGDPTGSYHGDSDLQLERINVYTNATGNKYVPRAILVLDLEPGTMSVRSQFGIIFRPDNVYVQSGAGNN
<i>C. elegans</i>	1	MREIVHIAQCCGQNIQAKFVEVISEDEIGDPTGSYHGDSDLQLERINVYTNATGNKYVPRAILVLDLEPGTMSVRSQFGIIFRPDNVYVQSGAGNN
<i>S. cerevisiae</i>	1	MREIVHIAQCCGQNIQAKFVEVISEDEIGDPTGSYHGDSDLQLERINVYTNATGNKYVPRAILVLDLEPGTMSVRSQFGIIFRPDNVYVQSGAGNN
▼		
<i>H. sapiens</i>	101	WAKGHTYEGAEIVDSVLDVVRKKESECDCLQGFQPLTSLGGGTGSGMGLTLLISKIREEYDRIMNTFVMPSPKVSQTVVEP NATLSVQLVVENTDETF
<i>R. norvegicus</i>	101	WAKGHTYEGAEIVDSVLDVVRKKESECDCLQGFQPLTSLGGGTGSGMGLTLLISKIREEYDRIMNTFVMPSPKVSQTVVEP NATLSVQLVVENTDETF
<i>M. musculus</i>	101	WAKGHTYEGAEIVDSVLDVVRKKESECDCLQGFQPLTSLGGGTGSGMGLTLLISKIREEYDRIMNTFVMPSPKVSQTVVEP NATLSVQLVVENTDETF
<i>B. taurus</i>	101	WAKGHTYEGAEIVDSVLDVVRKKESECDCLQGFQPLTSLGGGTGSGMGLTLLISKIREEYDRIMNTFVMPSPKVSQTVVEP NATLSVQLVVENTDETF
<i>G. gallus</i>	101	WAKGHTYEGAEIVDSVLDVVRKKESECDCLQGFQPLTSLGGGTGSGMGLTLLISKIREEYDRIMNTFVMPSPKVSQTVVEP NATLSVQLVVENTDETF
<i>X. tropicalis</i>	101	WAKGHTYEGAEIVDSVLDVVRKKESECDCLQGFQPLTSLGGGTGSGMGLTLLISKIREEYDRIMNTFVMPSPKVSQTVVEP NATLSVQLVVENTDETF
<i>D. rerio</i>	101	WAKGHTYEGAEIVDSVLDVVRKKESECDCLQGFQPLTSLGGGTGSGMGLTLLISKIREEYDRIMNTFVMPSPKVSQTVVEP NATLSVQLVVENTDETF
<i>D. melanogaster</i>	101	WAKGHTYEGAEIVDSVLDVVRKKESECDCLQGFQPLTSLGGGTGSGMGLTLLISKIREEYDRIMNTFVMPSPKVSQTVVEP NATLSVQLVVENTDETF
<i>C. elegans</i>	101	WAKGHTYEGAEIVDSVLDVVRKKESECDCLQGFQPLTSLGGGTGSGMGLTLLISKIREEYDRIMNTFVMPSPKVSQTVVEP NATLSVQLVVENTDETF
<i>S. cerevisiae</i>	101	WAKGHTYEGAEIVDSVLDVVRKKESECDCLQGFQPLTSLGGGTGSGMGLTLLISKIREEYDRIMNTFVMPSPKVSQTVVEP NATLSVQLVVENTDETF
▼		
<i>H. sapiens</i>	201	CIENALYDLCIFRTKRLTTPFYGDHLHLSVATMSGVTTCLRFPQGLNADLKRLLAVNNVYFRLRFFMFGFAPLTSRGSQYRALVPELQOMFDSKNNM
<i>R. norvegicus</i>	201	CIENALYDLCIFRTKRLTTPFYGDHLHLSVATMSGVTTCLRFPQGLNADLKRLLAVNNVYFRLRFFMFGFAPLTSRGSQYRALVPELQOMFDSKNNM
<i>M. musculus</i>	201	CIENALYDLCIFRTKRLTTPFYGDHLHLSVATMSGVTTCLRFPQGLNADLKRLLAVNNVYFRLRFFMFGFAPLTSRGSQYRALVPELQOMFDSKNNM
<i>B. taurus</i>	201	CIENALYDLCIFRTKRLTTPFYGDHLHLSVATMSGVTTCLRFPQGLNADLKRLLAVNNVYFRLRFFMFGFAPLTSRGSQYRALVPELQOMFDSKNNM
<i>G. gallus</i>	201	CIENALYDLCIFRTKRLTTPFYGDHLHLSVATMSGVTTCLRFPQGLNADLKRLLAVNNVYFRLRFFMFGFAPLTSRGSQYRALVPELQOMFDSKNNM
<i>X. tropicalis</i>	201	CIENALYDLCIFRTKRLTTPFYGDHLHLSVATMSGVTTCLRFPQGLNADLKRLLAVNNVYFRLRFFMFGFAPLTSRGSQYRALVPELQOMFDSKNNM
<i>D. rerio</i>	201	CIENALYDLCIFRTKRLTTPFYGDHLHLSVATMSGVTTCLRFPQGLNADLKRLLAVNNVYFRLRFFMFGFAPLTSRGSQYRALVPELQOMFDSKNNM
<i>D. melanogaster</i>	201	CIENALYDLCIFRTKRLTTPFYGDHLHLSVATMSGVTTCLRFPQGLNADLKRLLAVNNVYFRLRFFMFGFAPLTSRGSQYRALVPELQOMFDSKNNM
<i>C. elegans</i>	201	CIENALYDLCIFRTKRLTTPFYGDHLHLSVATMSGVTTCLRFPQGLNADLKRLLAVNNVYFRLRFFMFGFAPLTSRGSQYRALVPELQOMFDSKNNM
<i>S. cerevisiae</i>	201	CIENALYDLCIFRTKRLTTPFYGDHLHLSVATMSGVTTCLRFPQGLNADLKRLLAVNNVYFRLRFFMFGFAPLTSRGSQYRALVPELQOMFDSKNNM
▼		
<i>H. sapiens</i>	301	AACDPBHRGRLVVAIFRGRMSKEVDEQMLNVQKNSYFVEIIPNNKTVACDIPRGLQMSATFIGNSTAIGLFRKRSIQGTAMFRKRAF LHWYTG
<i>R. norvegicus</i>	301	AACDPBHRGRLVVAIFRGRMSKEVDEQMLNVQKNSYFVEIIPNNKTVACDIPRGLQMSATFIGNSTAIGLFRKRSIQGTAMFRKRAF LHWYTG
<i>M. musculus</i>	301	AACDPBHRGRLVVAIFRGRMSKEVDEQMLNVQKNSYFVEIIPNNKTVACDIPRGLQMSATFIGNSTAIGLFRKRSIQGTAMFRKRAF LHWYTG
<i>B. taurus</i>	301	AACDPBHRGRLVVAIFRGRMSKEVDEQMLNVQKNSYFVEIIPNNKTVACDIPRGLQMSATFIGNSTAIGLFRKRSIQGTAMFRKRAF LHWYTG
<i>G. gallus</i>	301	AACDPBHRGRLVVAIFRGRMSKEVDEQMLNVQKNSYFVEIIPNNKTVACDIPRGLQMSATFIGNSTAIGLFRKRSIQGTAMFRKRAF LHWYTG
<i>X. tropicalis</i>	301	AACDPBHRGRLVVAIFRGRMSKEVDEQMLNVQKNSYFVEIIPNNKTVACDIPRGLQMSATFIGNSTAIGLFRKRSIQGTAMFRKRAF LHWYTG
<i>D. rerio</i>	301	AACDPBHRGRLVVAIFRGRMSKEVDEQMLNVQKNSYFVEIIPNNKTVACDIPRGLQMSATFIGNSTAIGLFRKRSIQGTAMFRKRAF LHWYTG
<i>D. melanogaster</i>	301	AACDPBHRGRLVVAIFRGRMSKEVDEQMLNVQKNSYFVEIIPNNKTVACDIPRGLQMSATFIGNSTAIGLFRKRSIQGTAMFRKRAF LHWYTG
<i>C. elegans</i>	301	AACDPBHRGRLVVAIFRGRMSKEVDEQMLNVQKNSYFVEIIPNNKTVACDIPRGLQMSATFIGNSTAIGLFRKRSIQGTAMFRKRAF LHWYTG
<i>S. cerevisiae</i>	301	AACDPBHRGRLVVAIFRGRMSKEVDEQMLNVQKNSYFVEIIPNNKTVACDIPRGLQMSATFIGNSTAIGLFRKRSIQGTAMFRKRAF LHWYTG
▼		
<i>H. sapiens</i>	401	EGCDMEFTFASNNNDLVSEYCYQDATADEGGEFEFEGDEFA---
<i>R. norvegicus</i>	401	EGCDMEFTFASNNNDLVSEYCYQDATADEGGEFEFEGDEFA---
<i>M. musculus</i>	401	EGCDMEFTFASNNNDLVSEYCYQDATADEGGEFEFEGDEFA---
<i>B. taurus</i>	401	EGCDMEFTFASNNNDLVSEYCYQDATADEGGEFEFEGDEFA---
<i>G. gallus</i>	401	EGCDMEFTFASNNNDLVSEYCYQDATADEGGEFEFEGDEFA---
<i>X. tropicalis</i>	401	EGCDMEFTFASNNNDLVSEYCYQDATADEGGEFEFEGDEFA---
<i>D. rerio</i>	401	EGCDMEFTFASNNNDLVSEYCYQDATADEGGEFEFEGDEFA---
<i>D. melanogaster</i>	401	EGCDMEFTFASNNNDLVSEYCYQDATADEGGEFEFEGDEFA---
<i>C. elegans</i>	401	EGCDMEFTFASNNNDLVSEYCYQDATADEGGEFEFEGDEFA---
<i>S. cerevisiae</i>	401	EGCDMEFTFASNNNDLVSEYCYQDATADEGGEFEFEGDEFA---

Supplementary Figure 2: Strict Evolutionary Conservation of  $\beta$ -tubulin. *Mus musculus*, *Rattus norvegicus*, *Bos taurus*, *Xenopus tropicalis*, *Gallus gallus*, *Danio rerio*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Saccharomyces cerevisiae*. The amino acids highlighted in black are conserved among species. Those highlighted in white are divergent. Note that the lower the position is in evolution, the greater the divergence between primary sequences. Arrowheads indicate positions of mutated residues.