

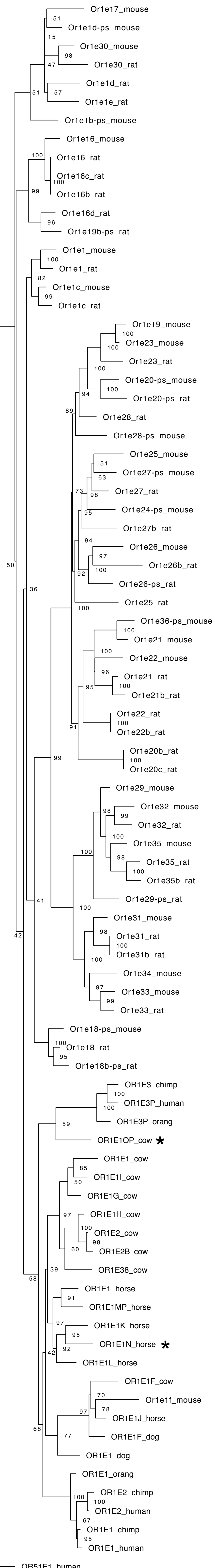
## **Additional File 4 – Maximum Likelihood phylogenetic analysis of the 50 largest subfamilies.**

Maximum likelihood phylogenies were generated for the 50 largest OR subfamilies. For each subfamily, Maximum likelihood phylogenetic analysis was performed on the conceptual translation of all members of the subfamily from the mammalian OR repertoires classified in this study (OR pseudogenes with more than two frame disruptions were excluded). Human OR51E1 was used as the outgroup for Class II OR subfamilies, and human OR1E2 was used as the outgroup for Class I OR subfamilies. Alignments were trimmed as described in the methods. The Maximum Likelihood (ML) trees were reconstructed using the IQTree webserver {Trifinopoulos, 2016 #66}, using the “AUTO” amino acid substitution model, and the ultra-fast bootstrap option (UFBoot) {Minh, 2013 #67} with 1000 samples. ML consensus trees are displayed with ultrafast bootstrap values on the branch nodes. ORs that were renamed manually are annotated with an asterisk (\*). Scale bar represents the number of amino acid changes per site.

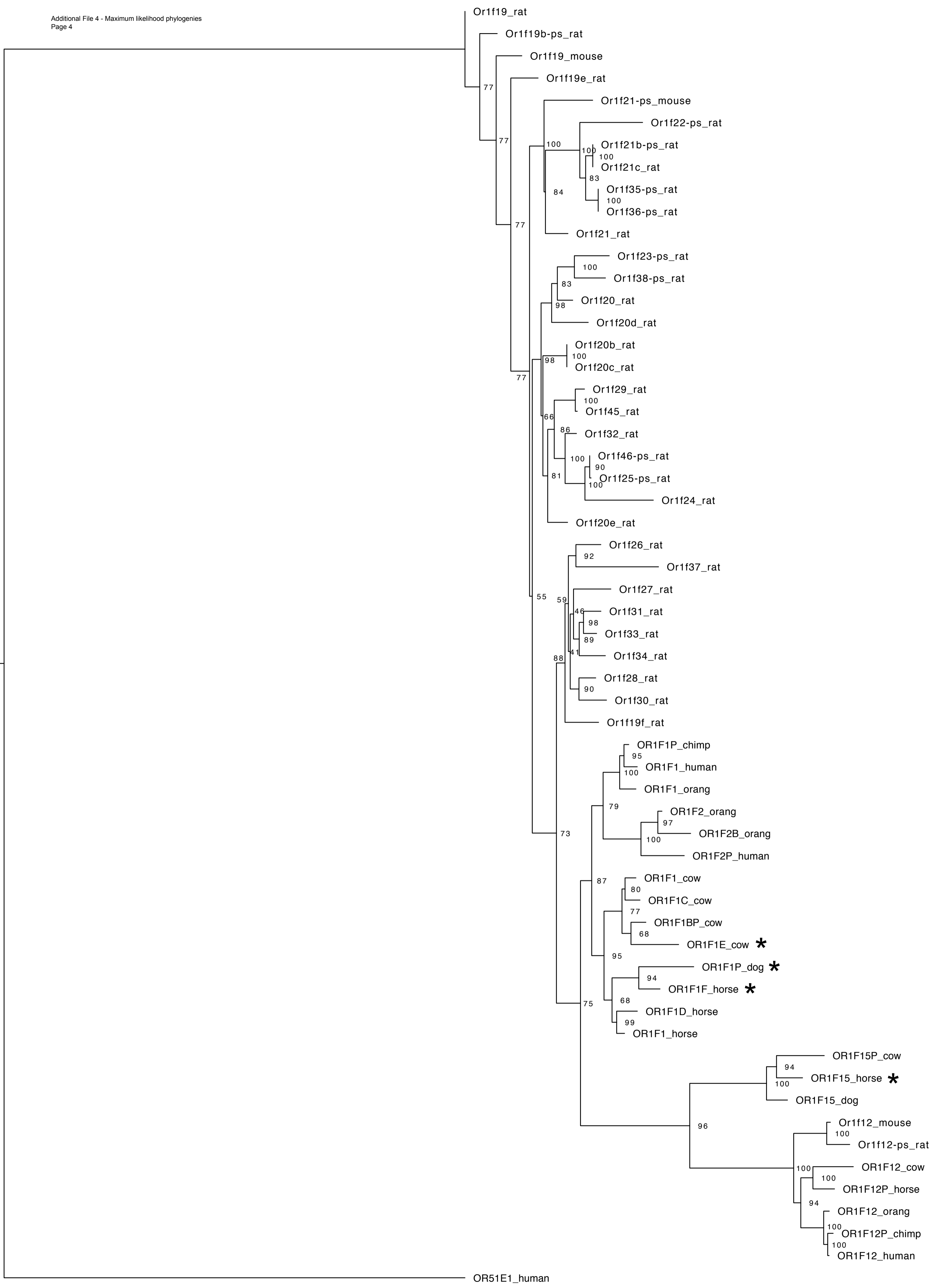
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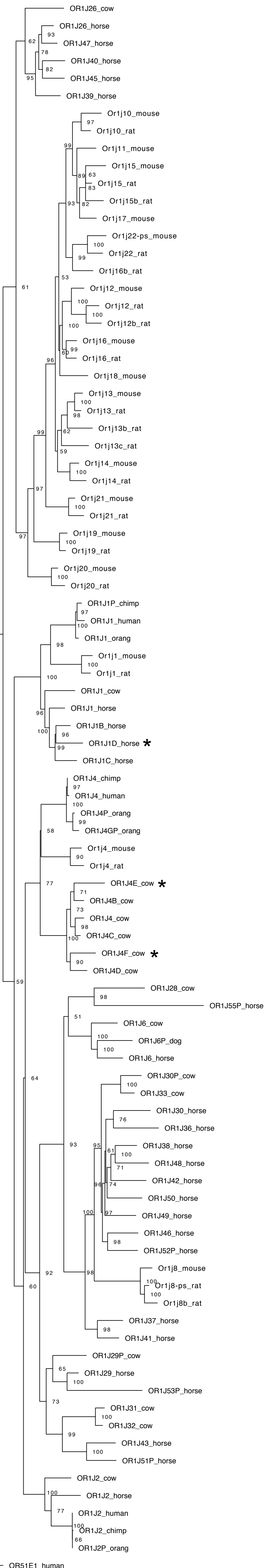
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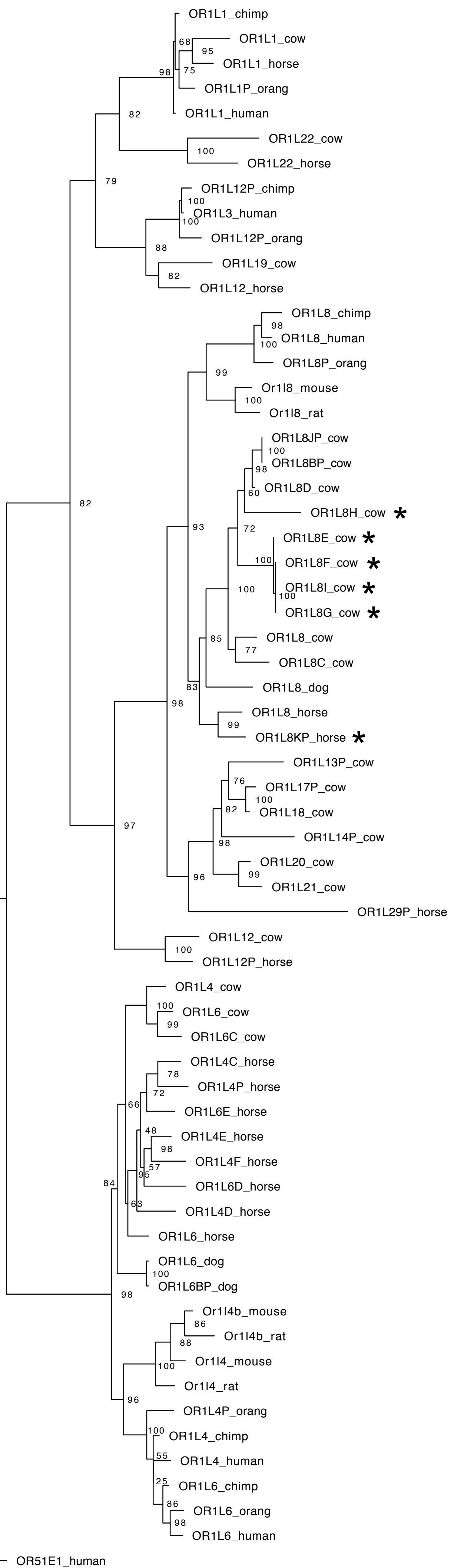


OR51E1\_human

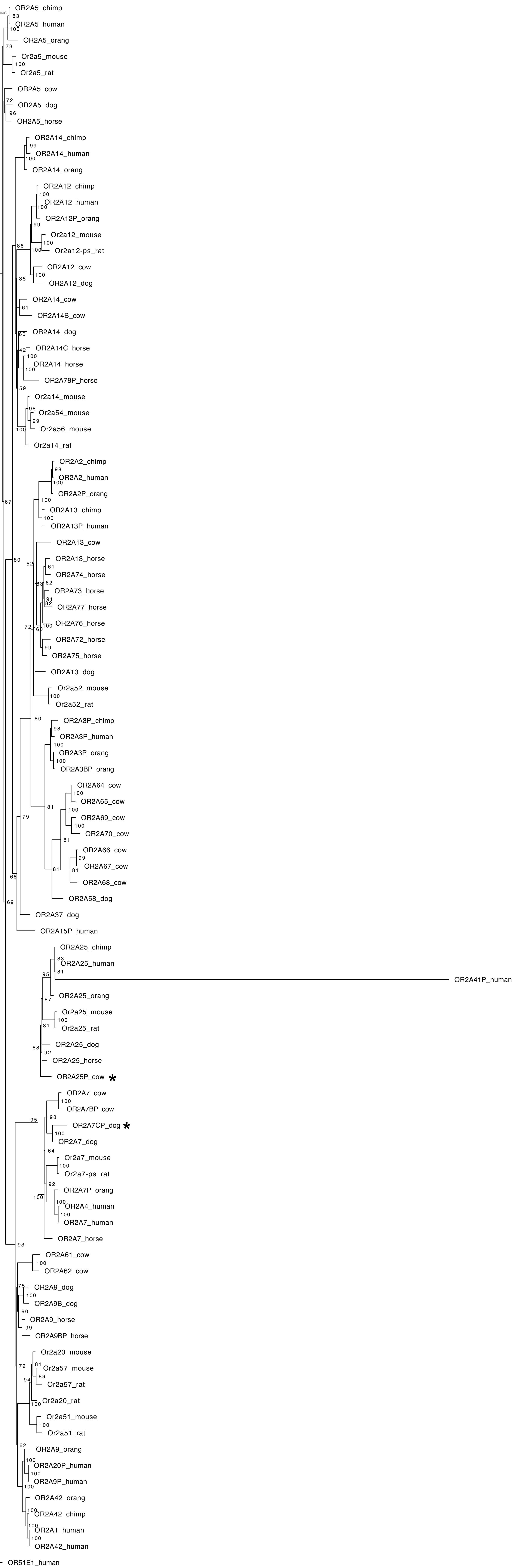




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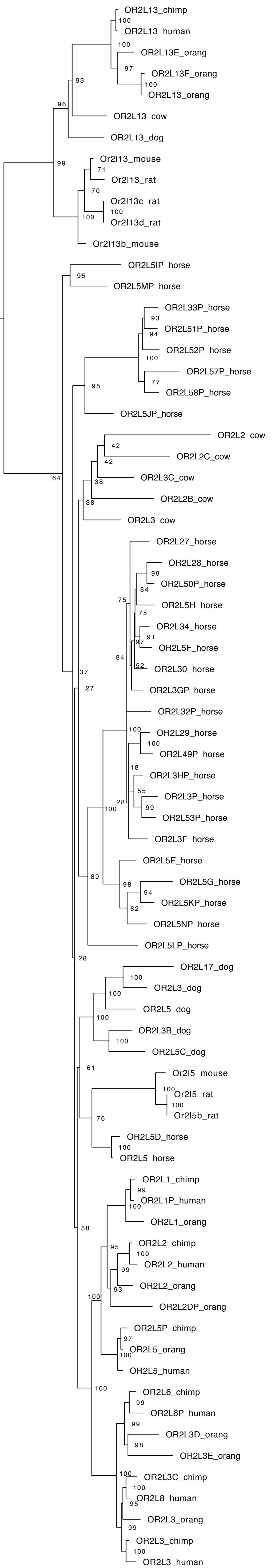


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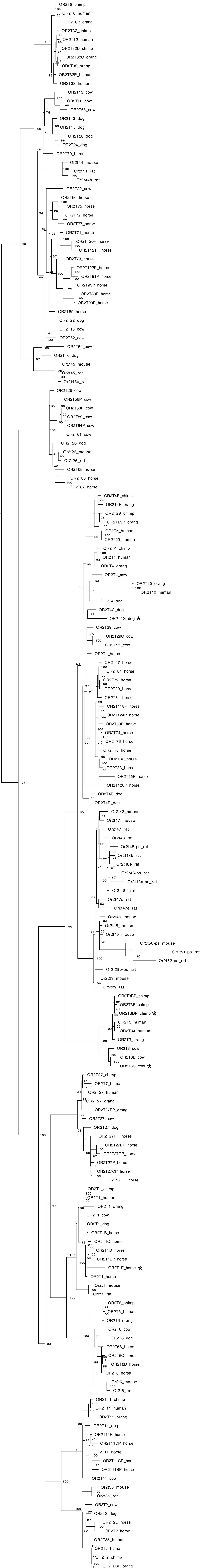




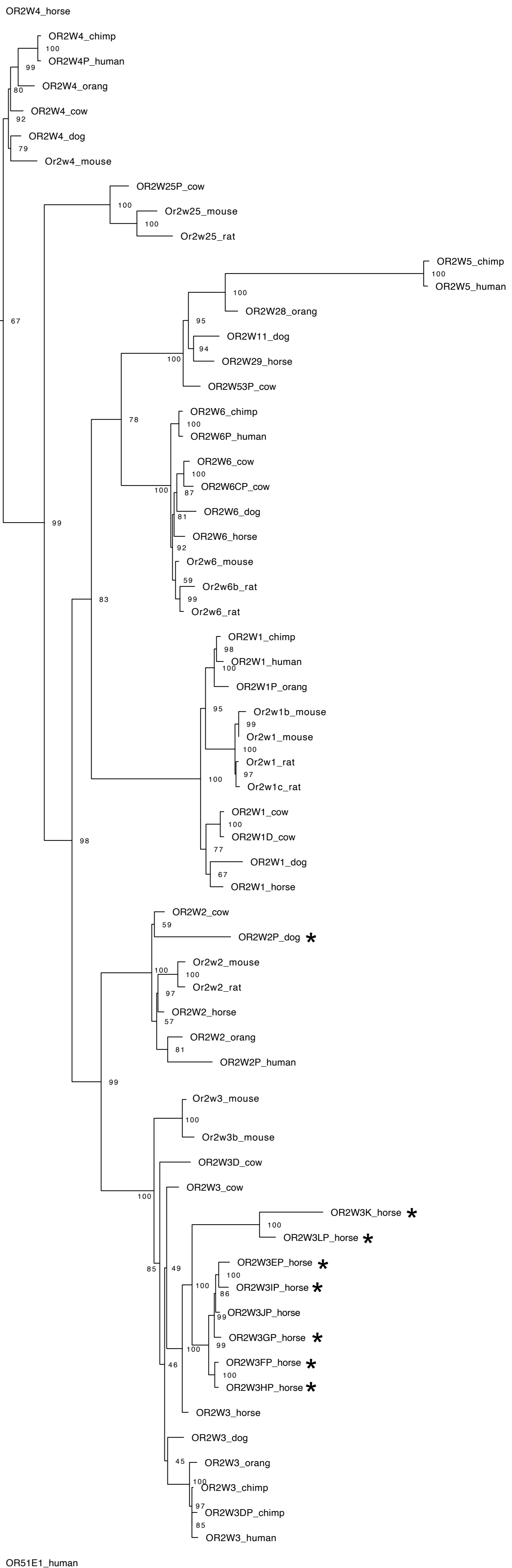


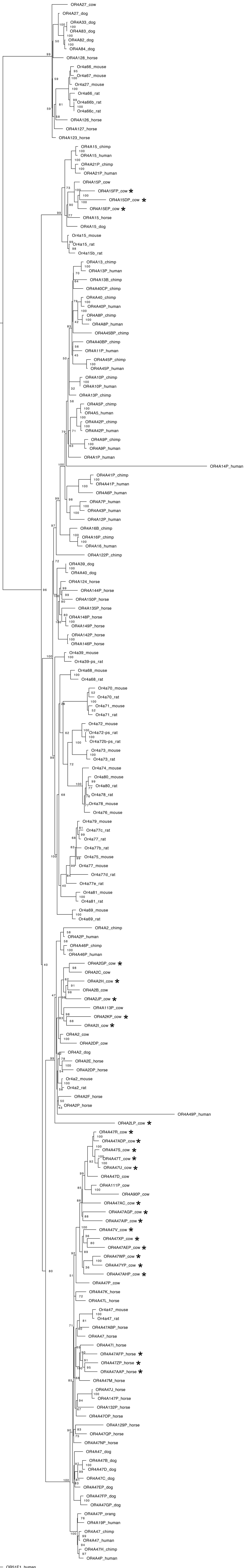


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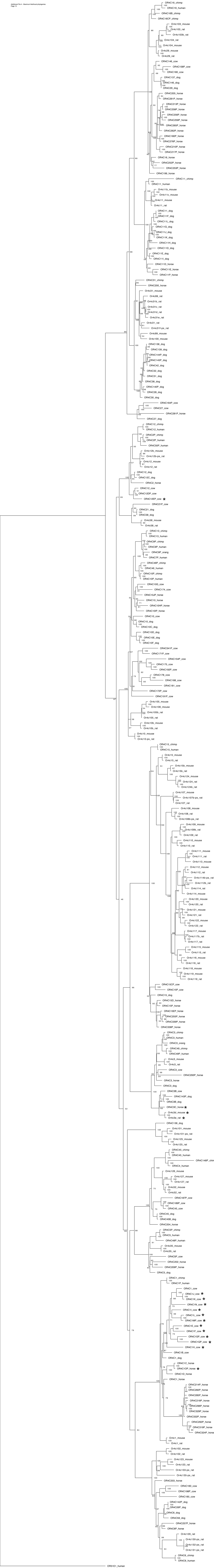


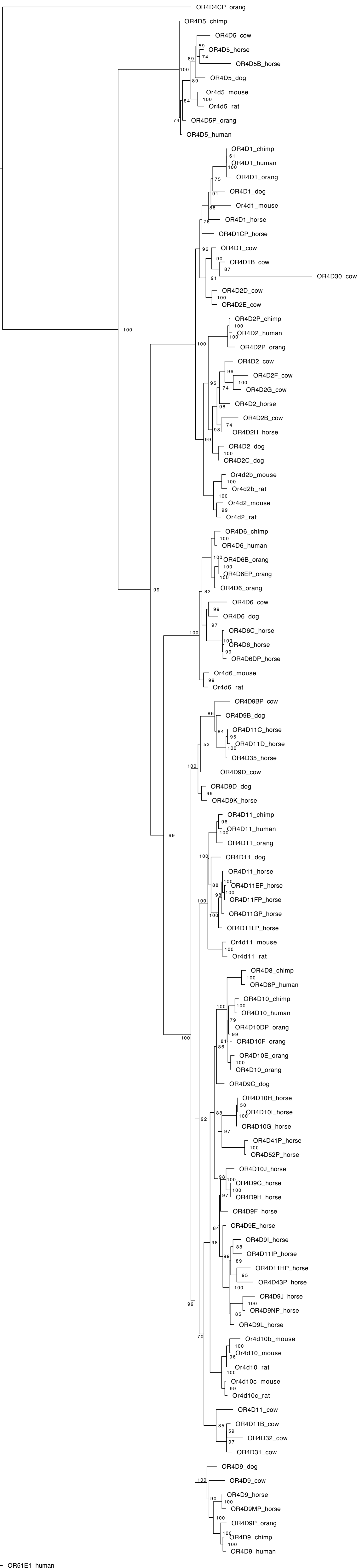
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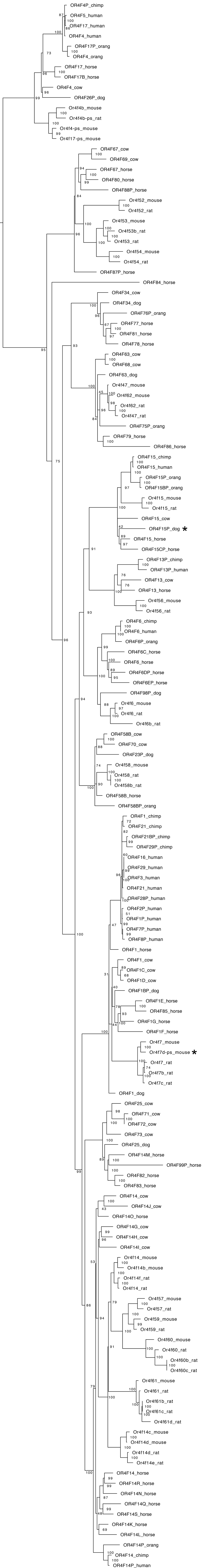


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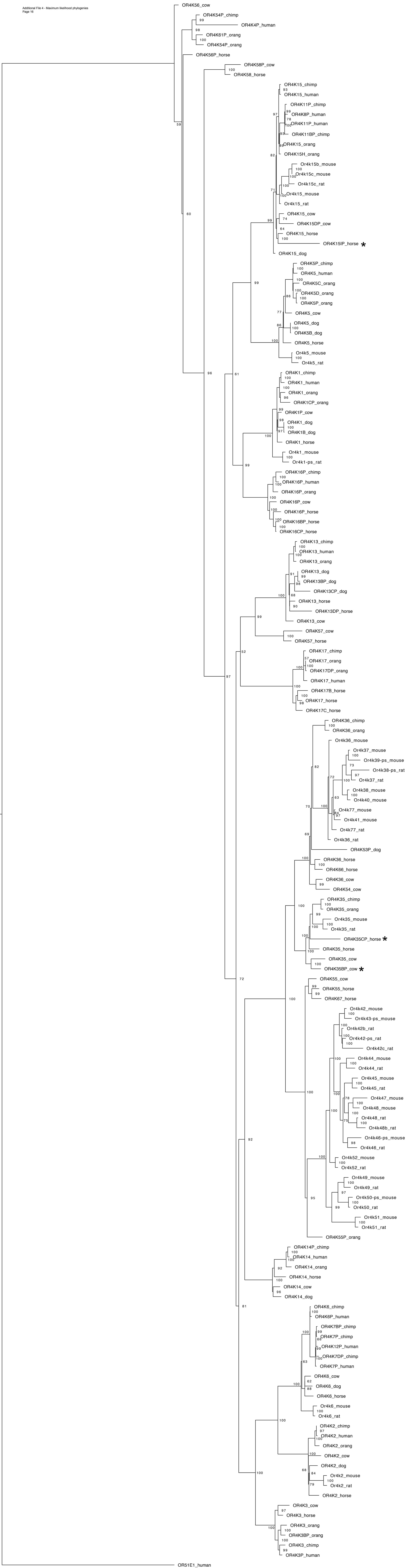




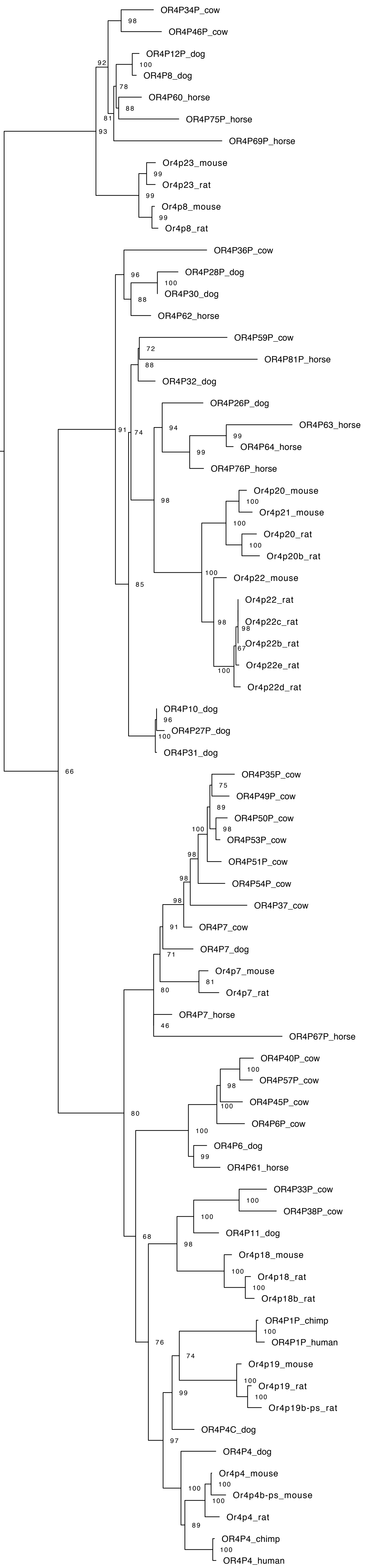
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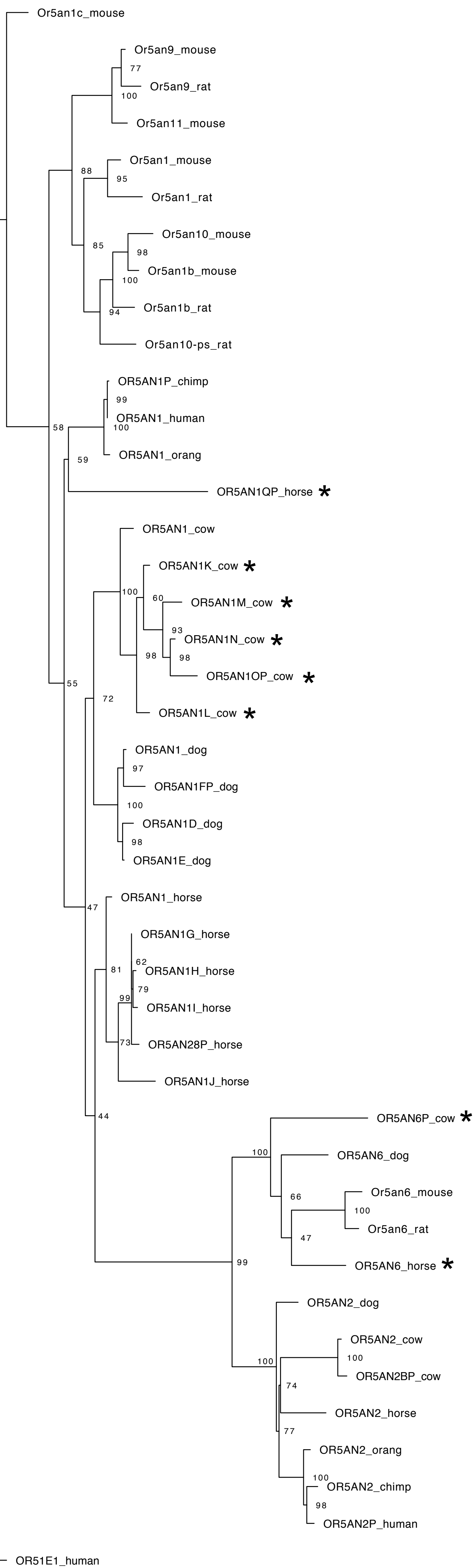






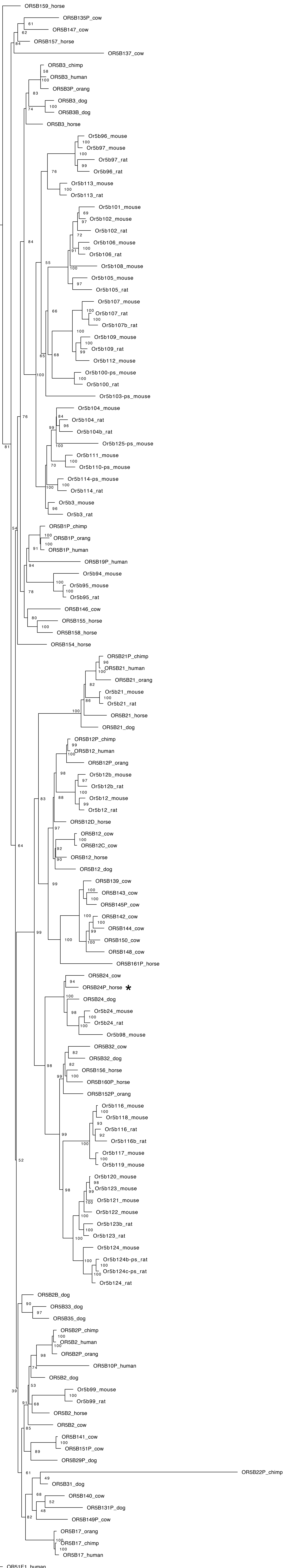


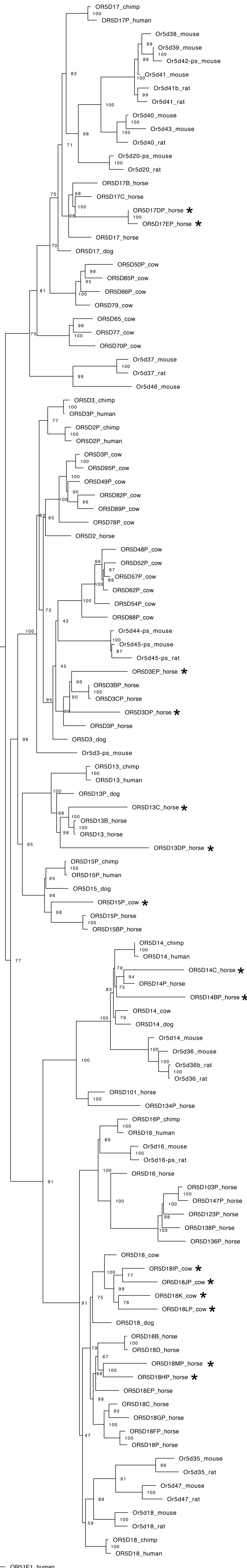
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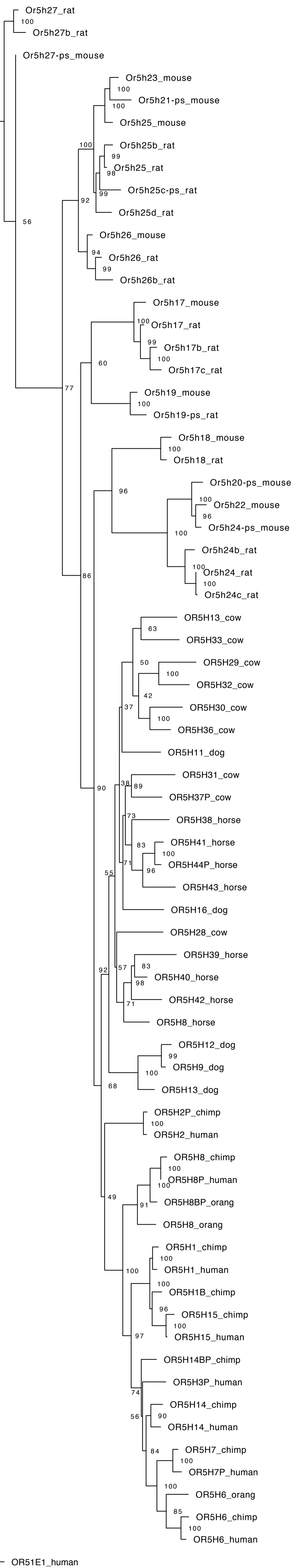
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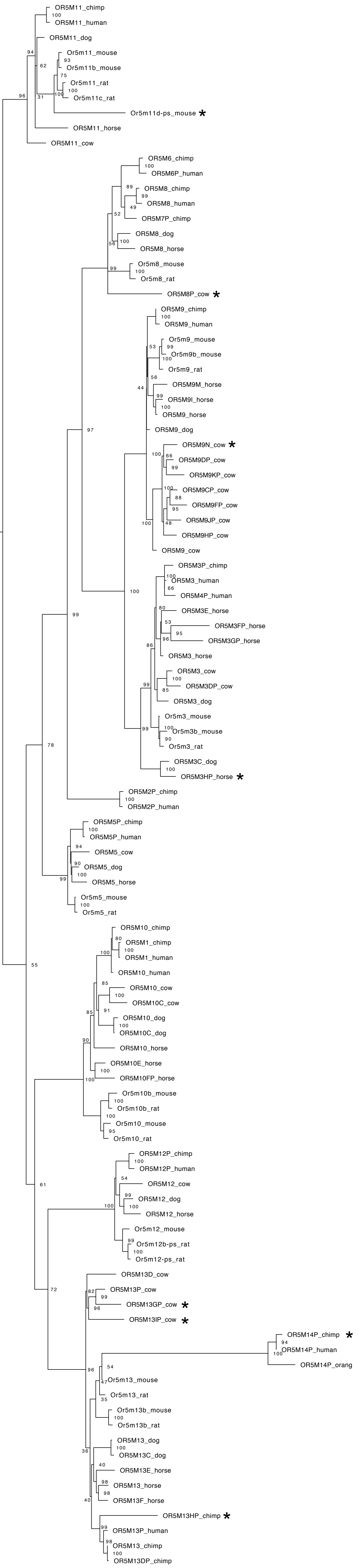


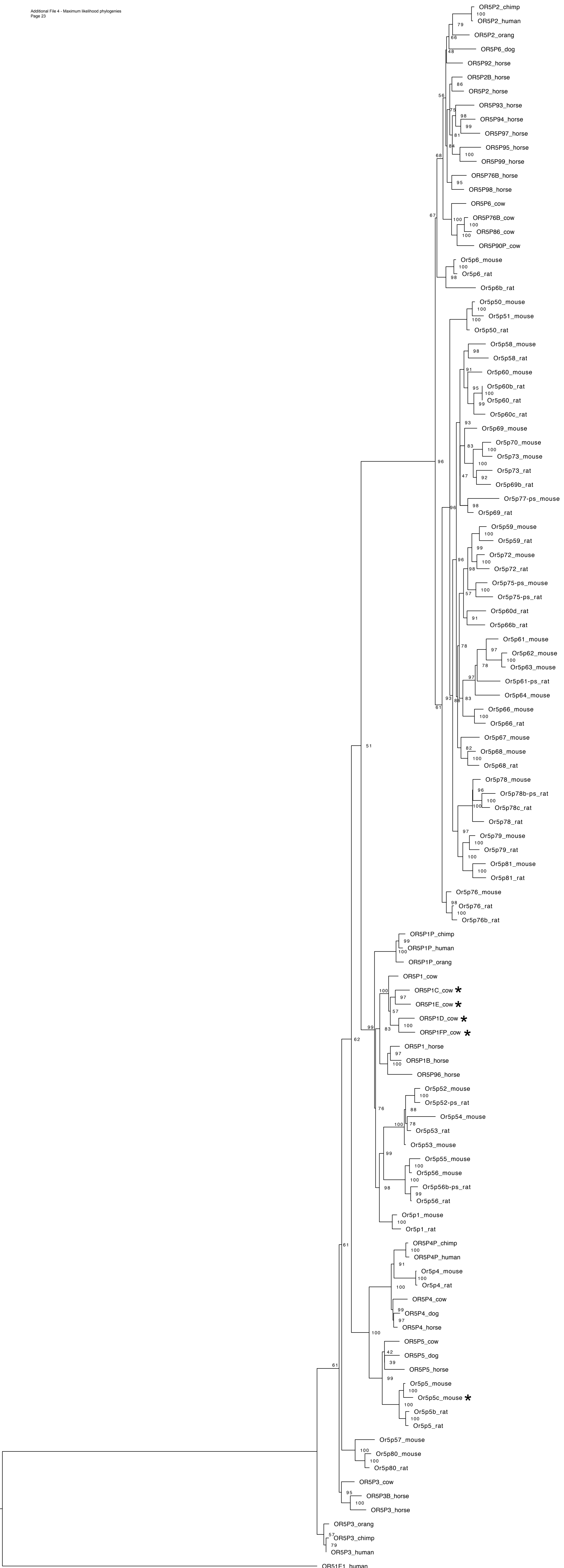


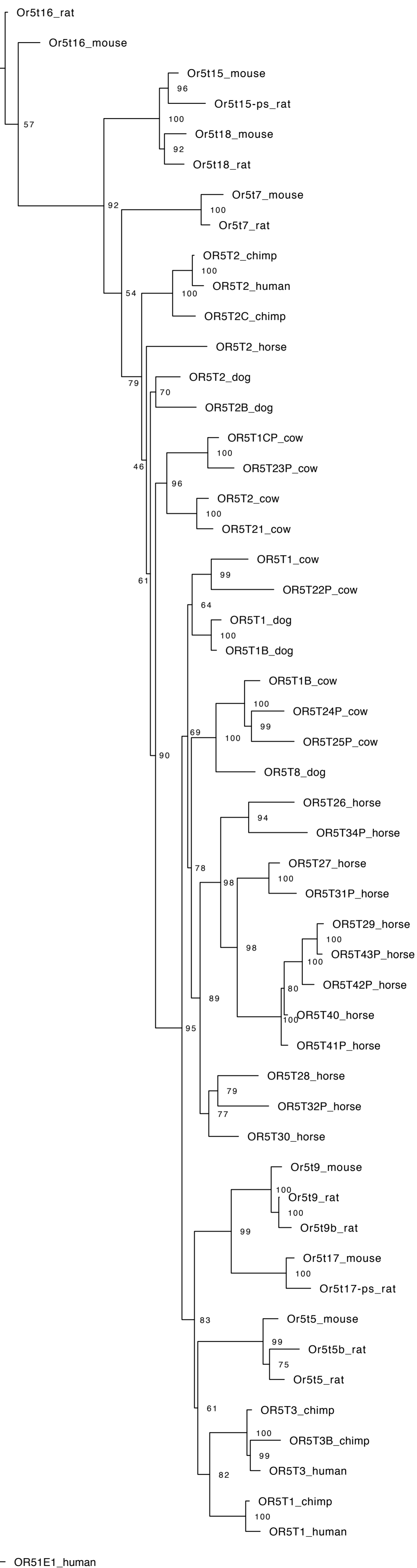
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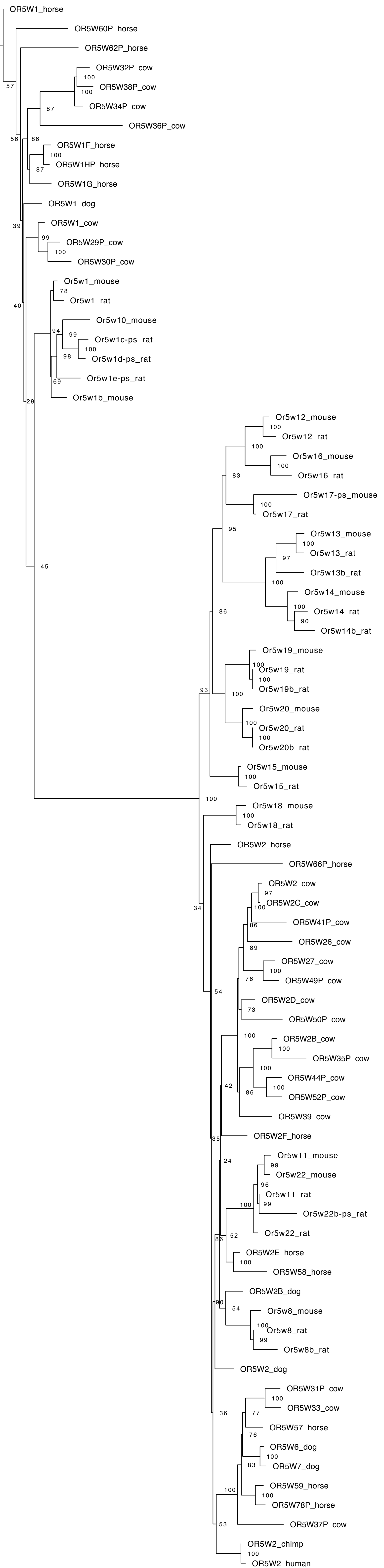
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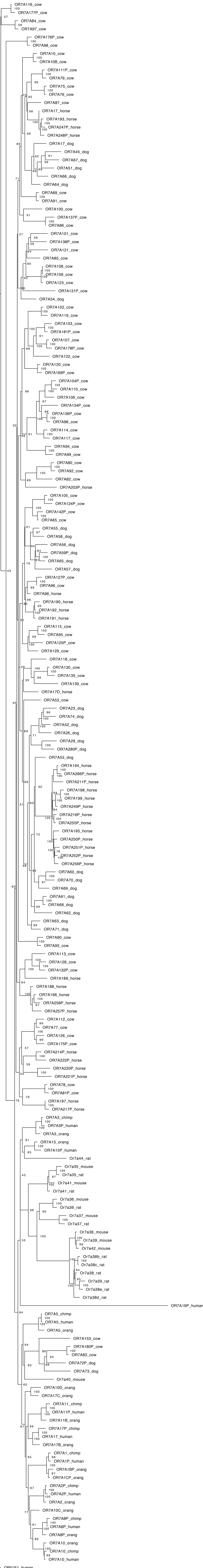


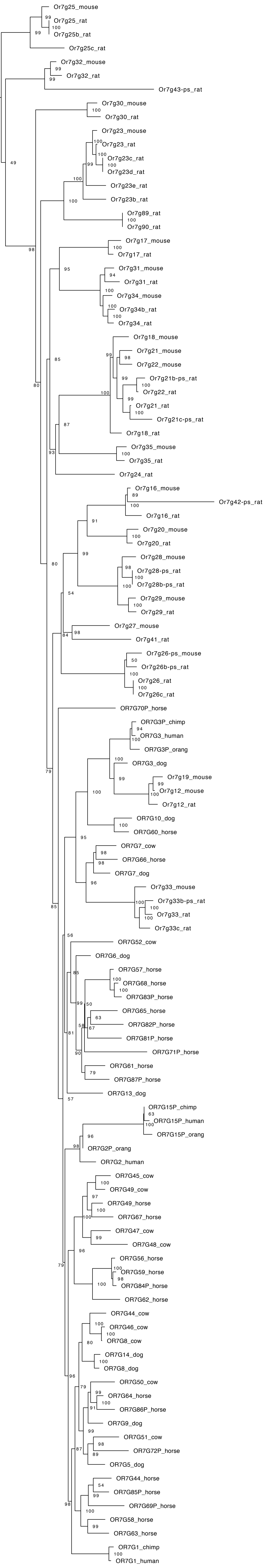




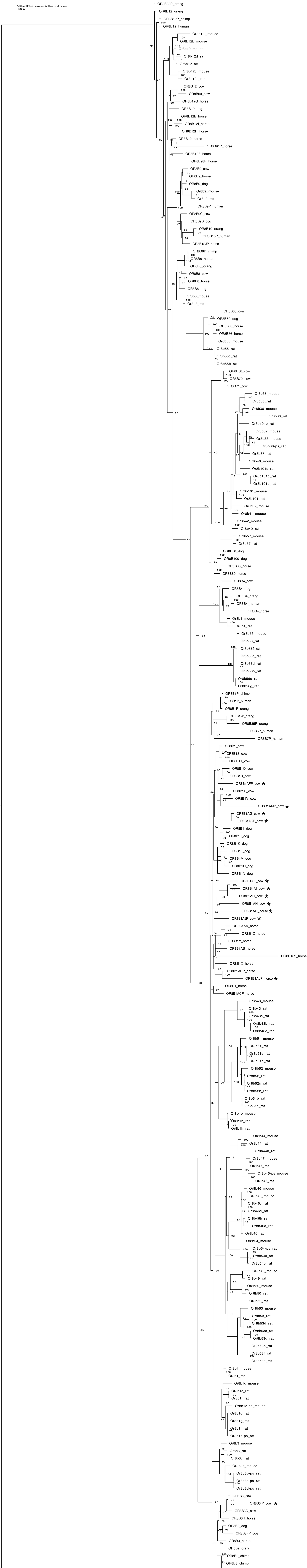


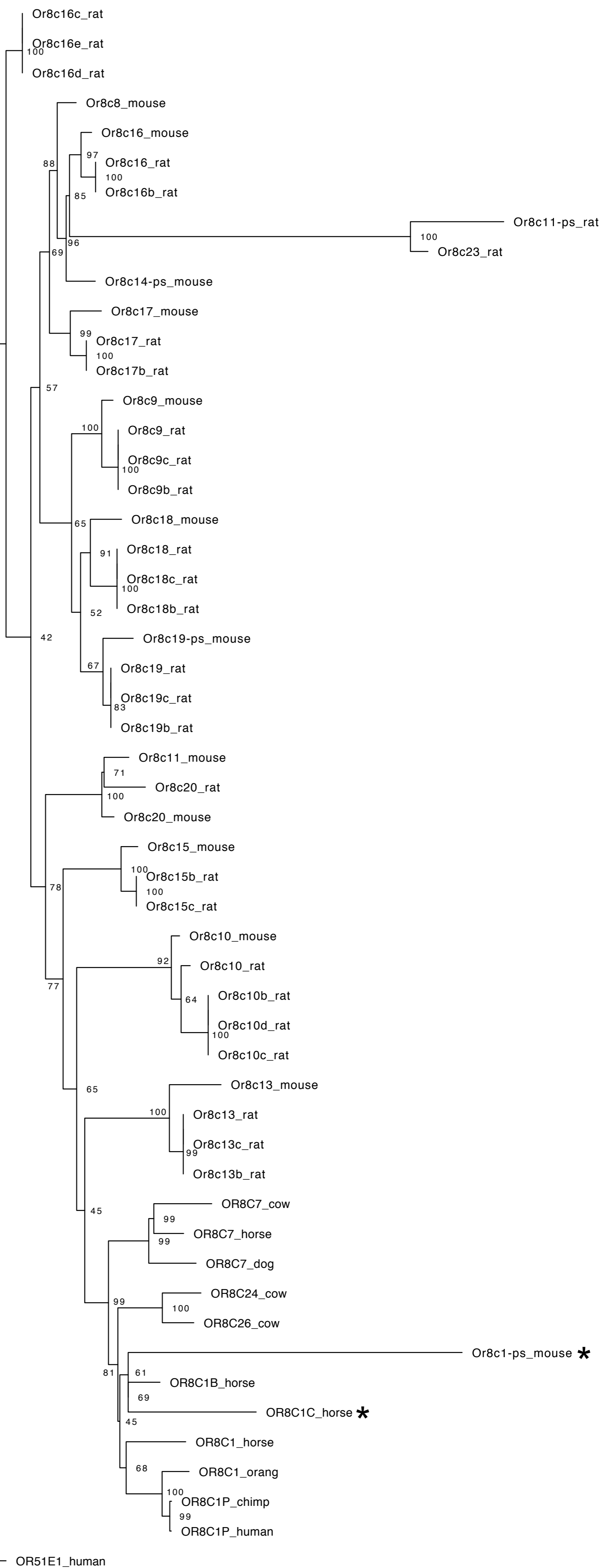




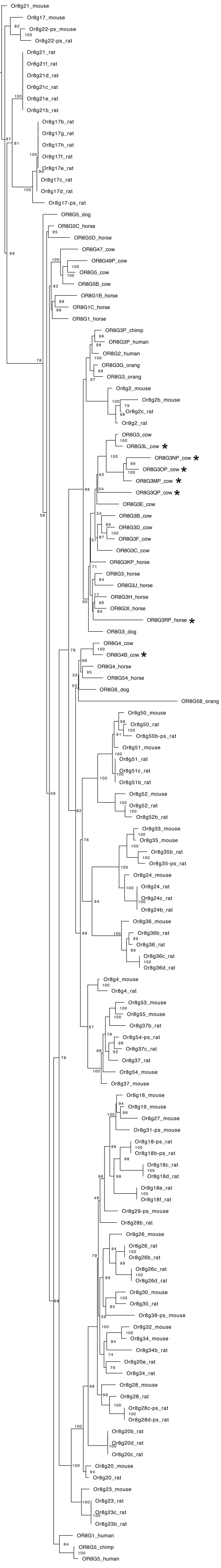


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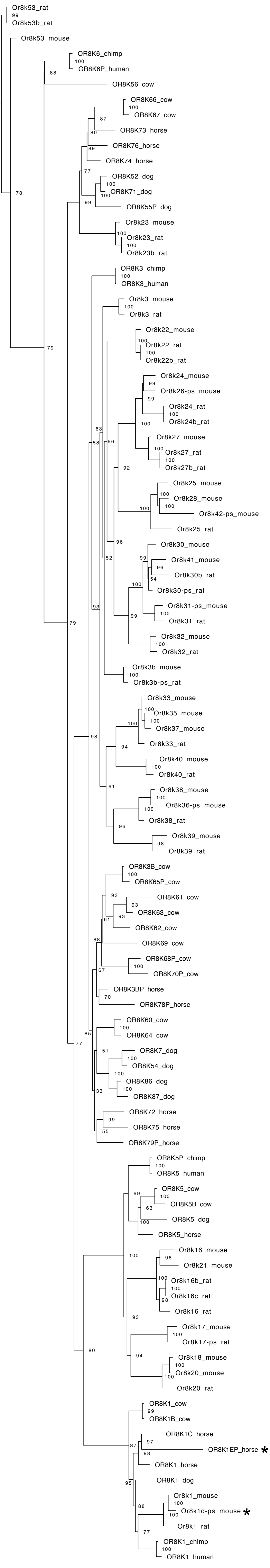




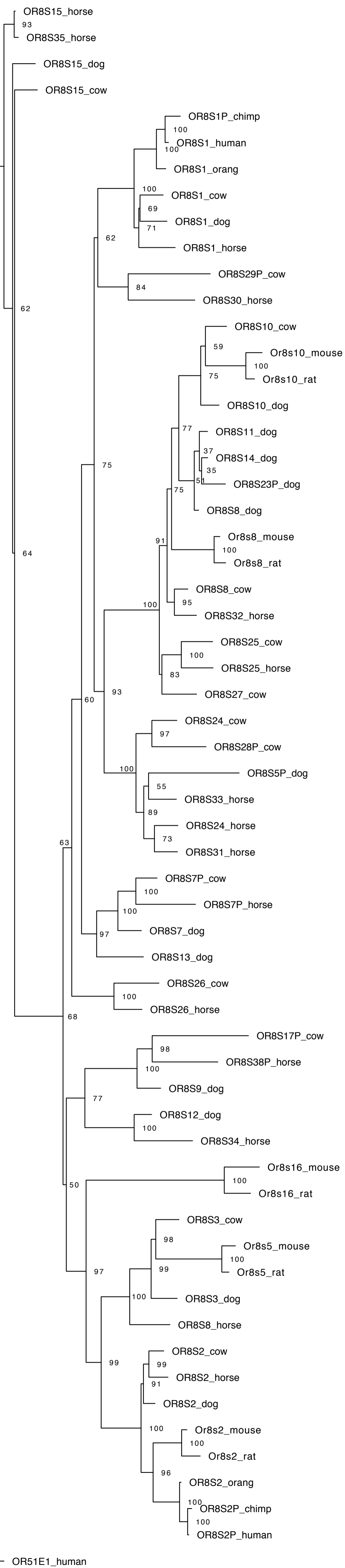


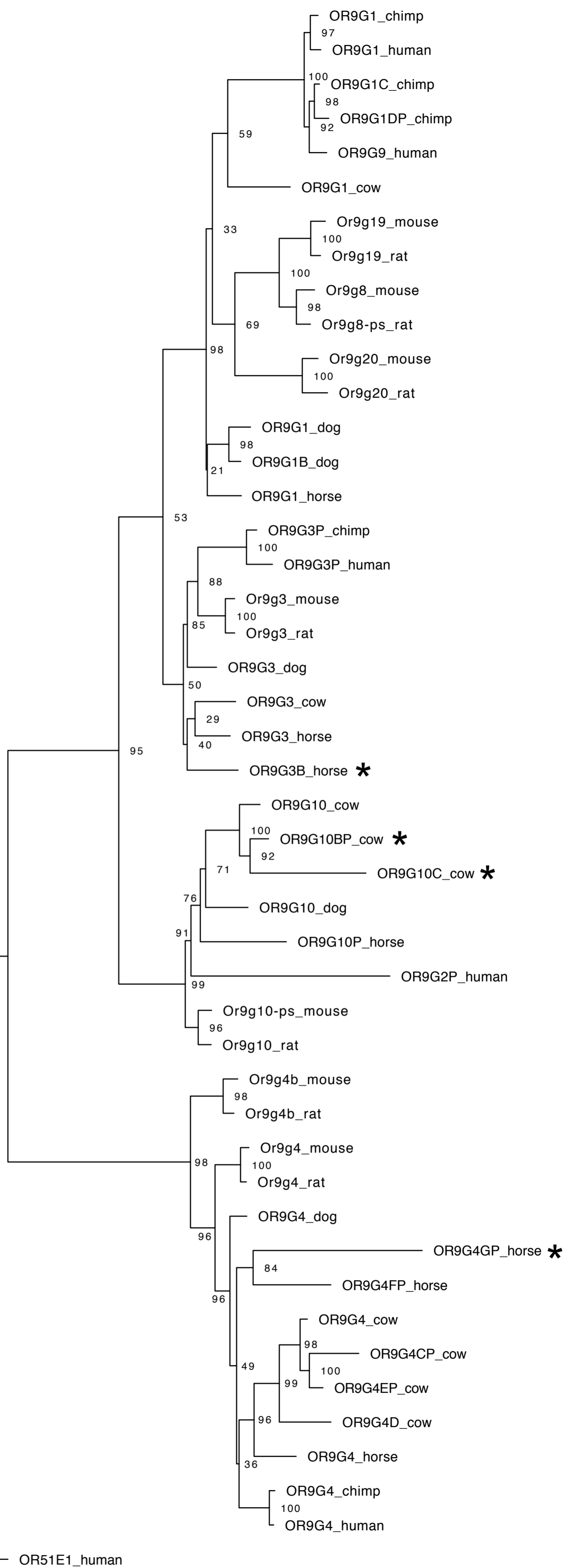


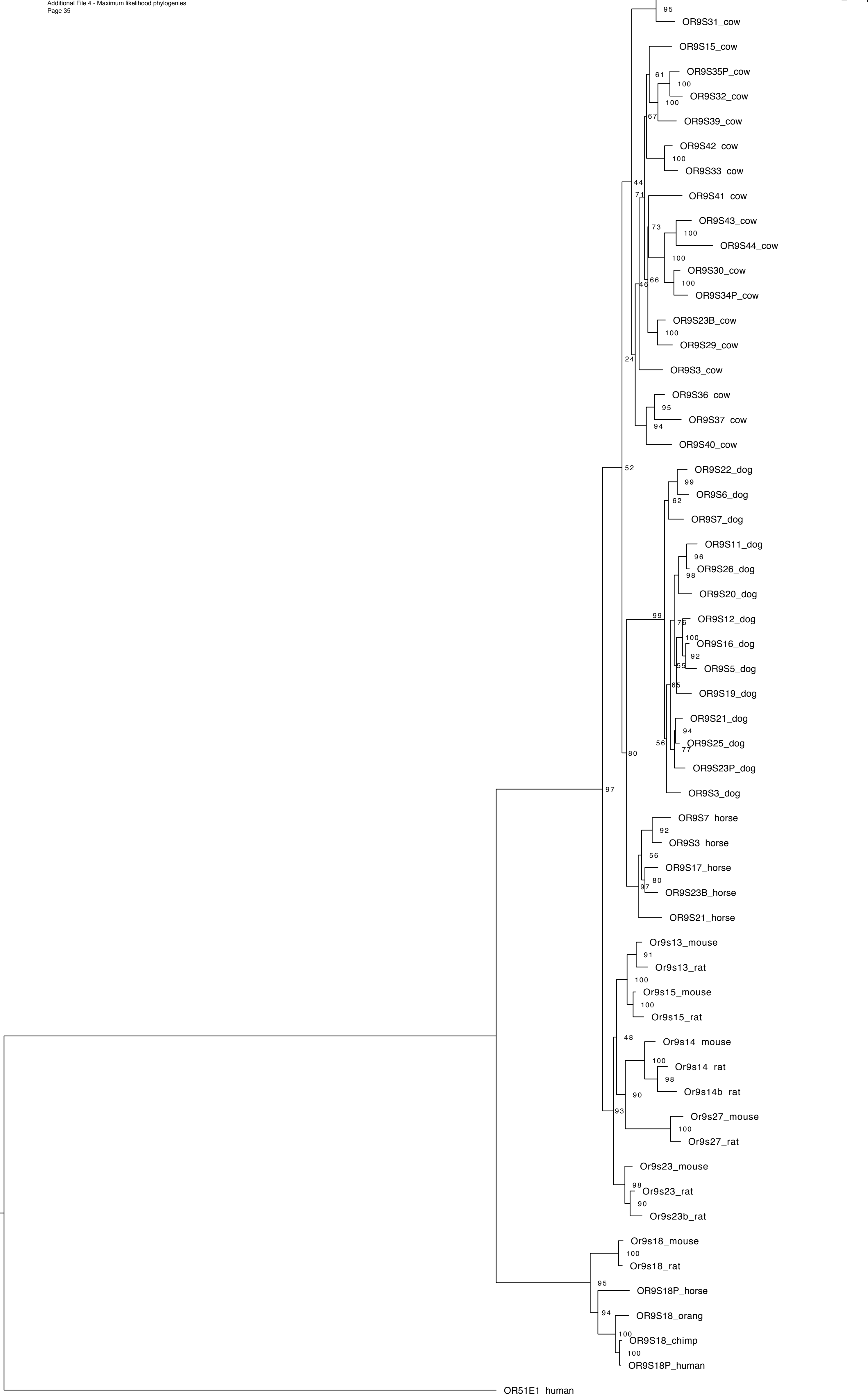
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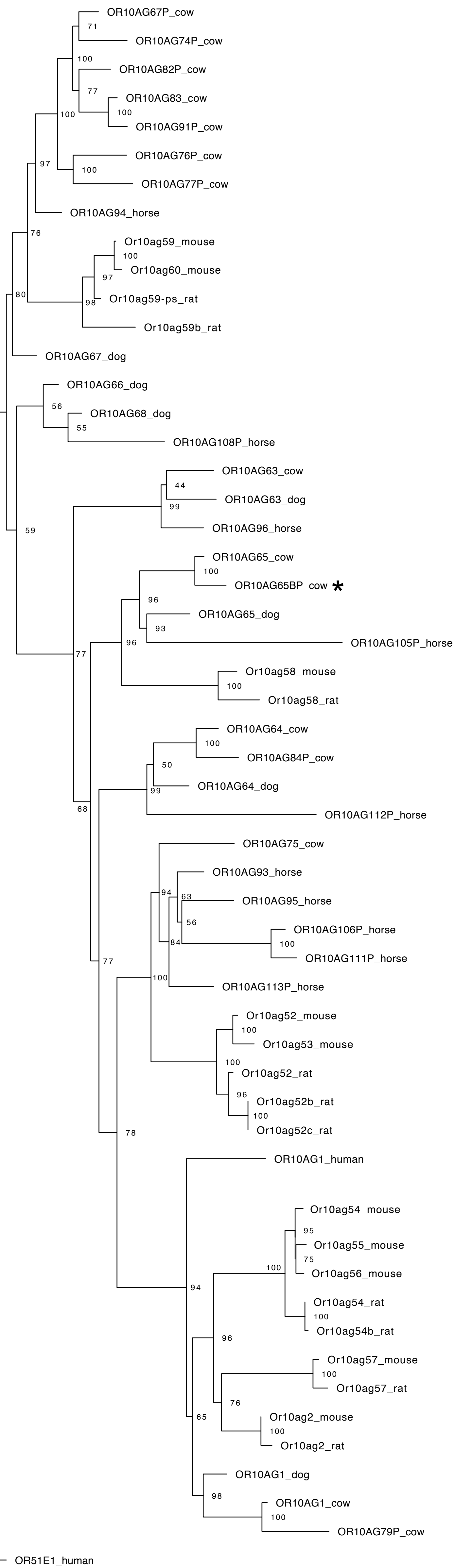












Or10a14b\_rat

Or10a14c\_rat

Or10a127-ps\_rat

100

Or10a13\_rat

51

Or10a15-ps\_rat

100

41

Or10a15b\_rat

Or10a14\_rat

86

Or10a19-ps\_rat

100

Or10a10-ps\_rat

Or10a130-ps\_rat

Or10a131-ps\_rat

Or10a12-ps\_rat

77

Or10a126-ps\_rat

53

Or10a125-ps\_rat

6

Or10a121-ps\_rat

Or10a132-ps\_rat

72

Or10a133-ps\_rat

64

Or10a139-ps\_rat

Or10a14-ps\_rat

71

Or10a19-ps\_rat

100

Or10a123-ps\_rat

90

Or10a11-ps\_rat

78

Or10a122-ps\_rat

95

Or10a15-ps\_rat

99

Or10a20-ps\_rat

Or10a2\_mouse

81

Or10a4\_mouse

50

Or10a3\_mouse

74

Or10a5\_mouse

32

Or10a7\_mouse

41

Or10a7\_rat

54

Or10a6\_mouse

47

Or10a6-ps\_rat

OR10AL40\_dog

38

OR10AL40\_horse

64

OR10AL44\_horse

95

OR10AL45\_horse

49

OR10AL46\_horse

31

OR10AL43\_cow

80

OR10AL40\_cow

77

OR10AL41\_cow

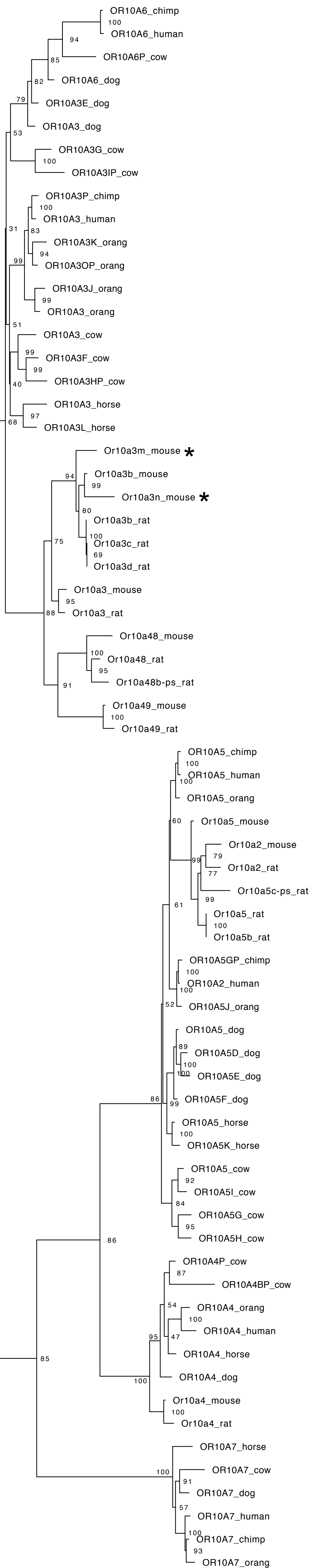
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OR10AL42\_cow

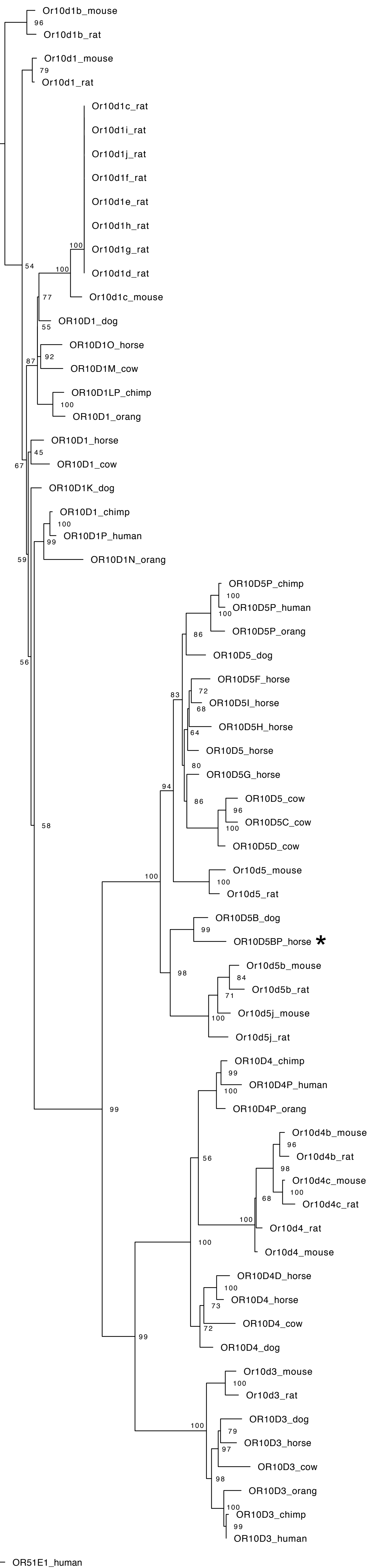
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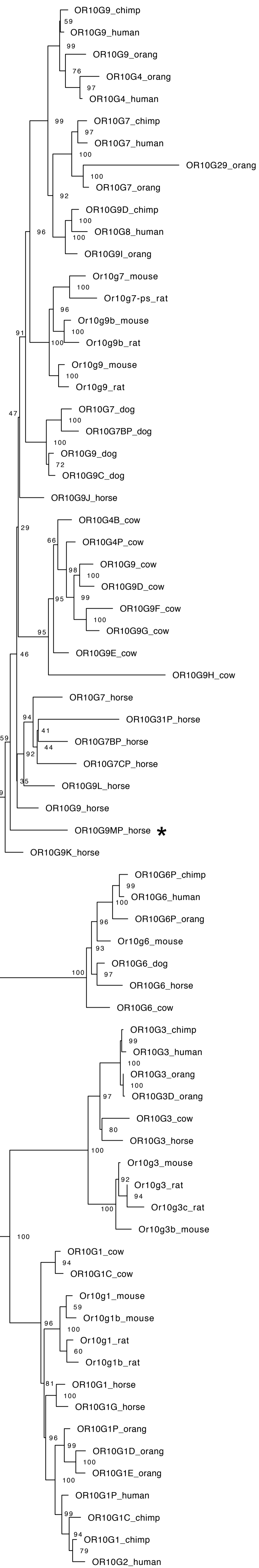




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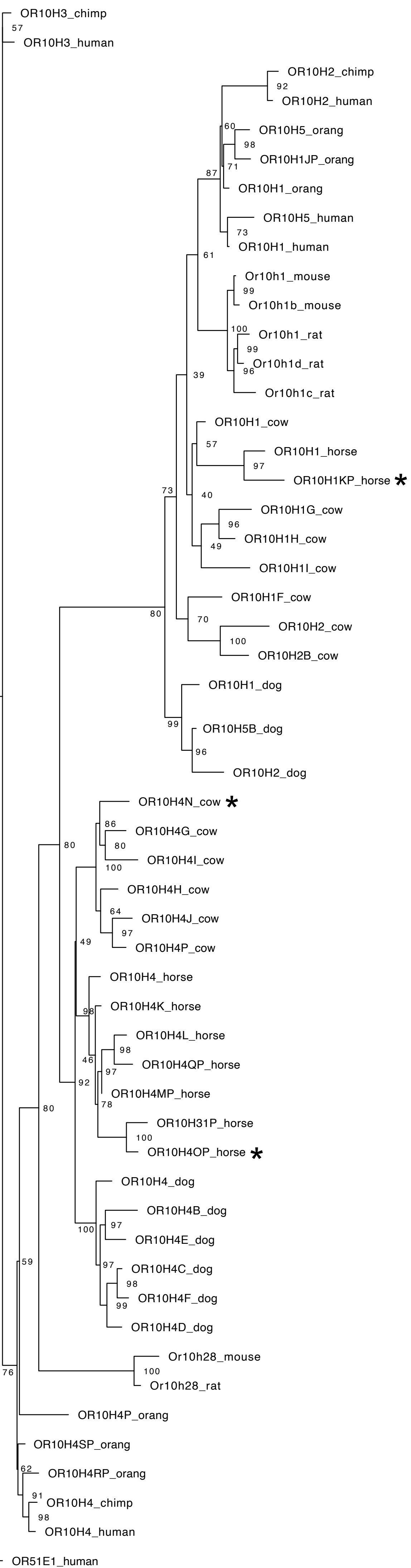
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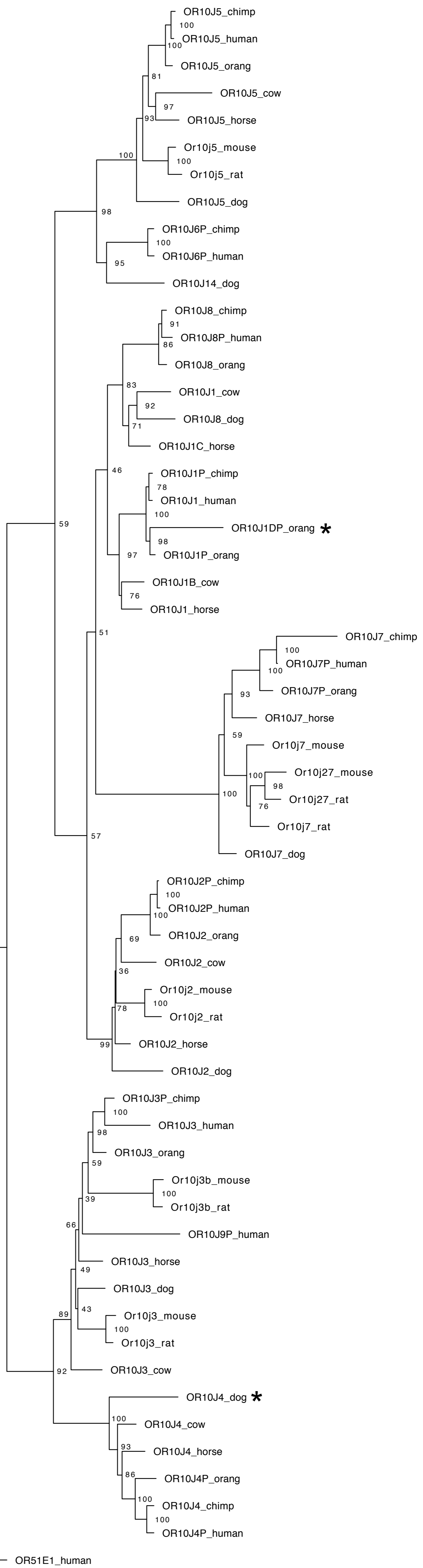


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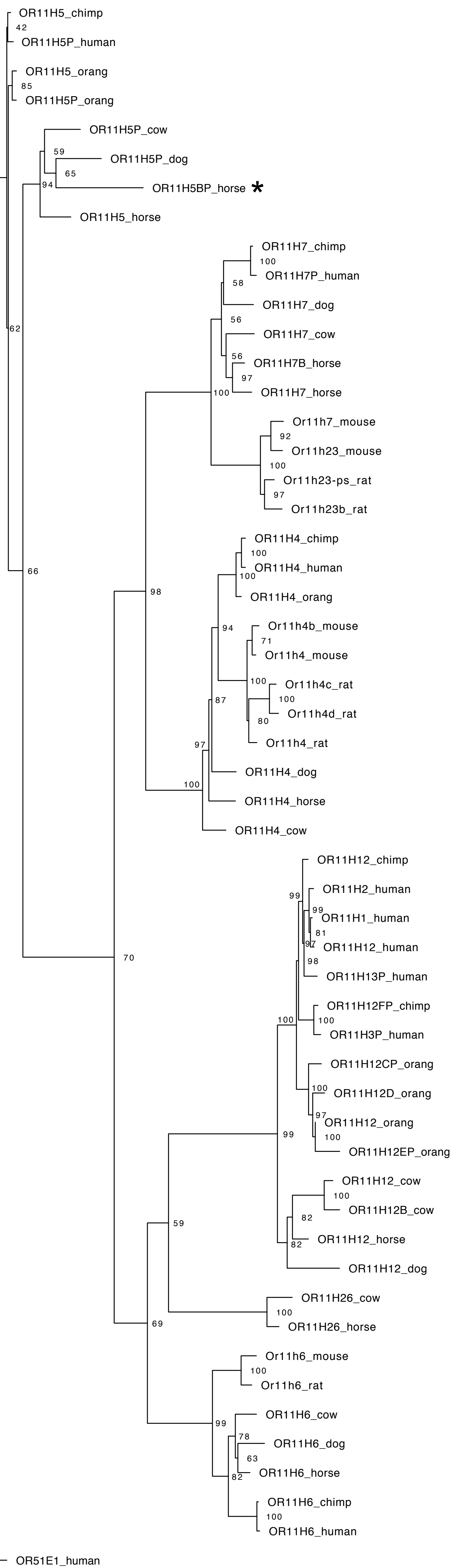
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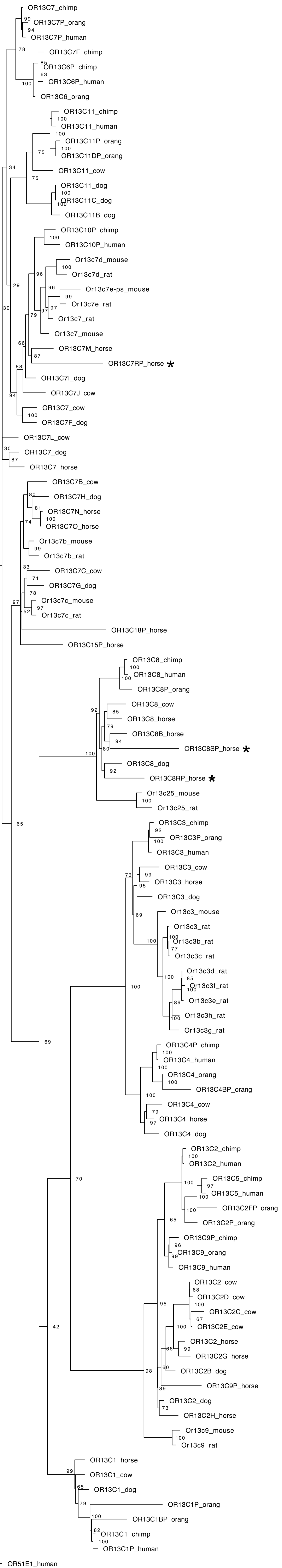


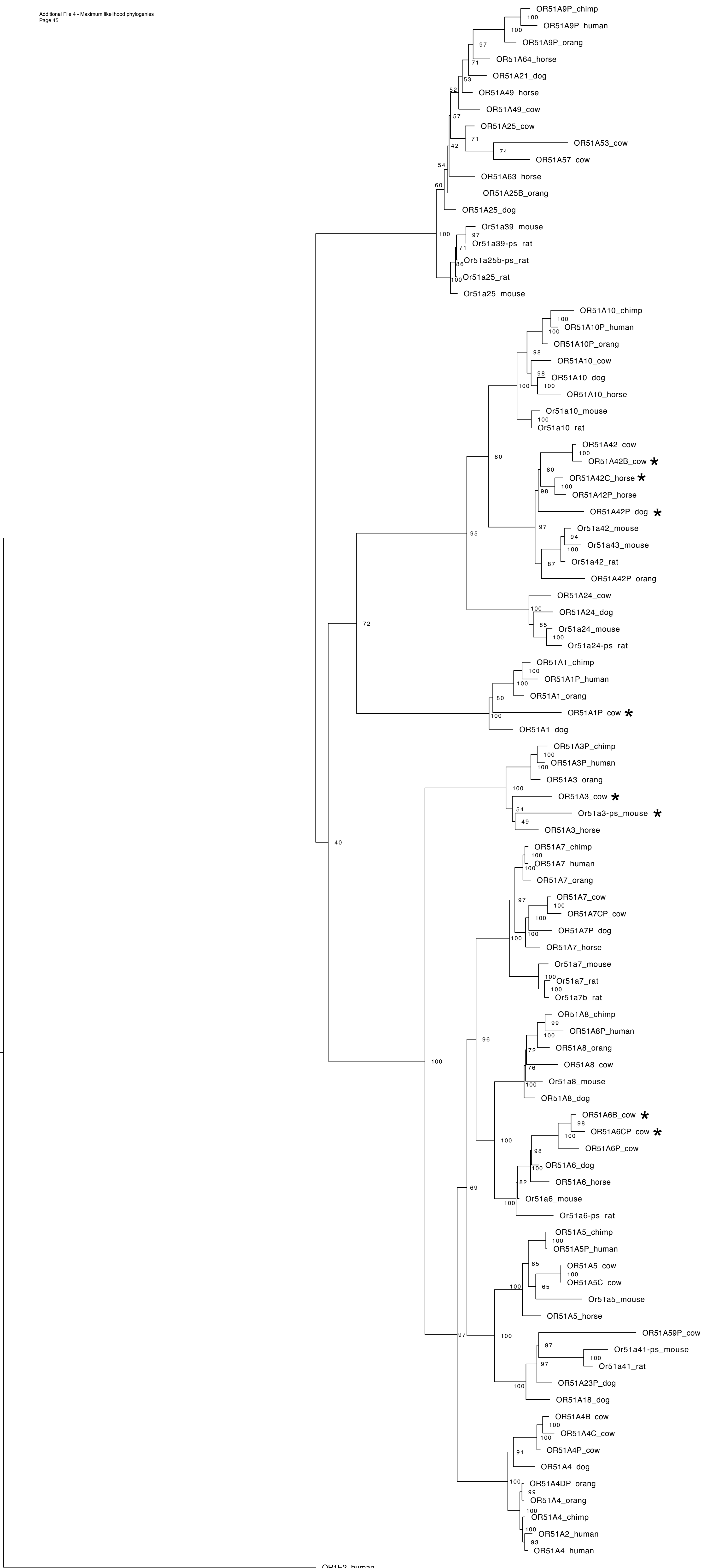


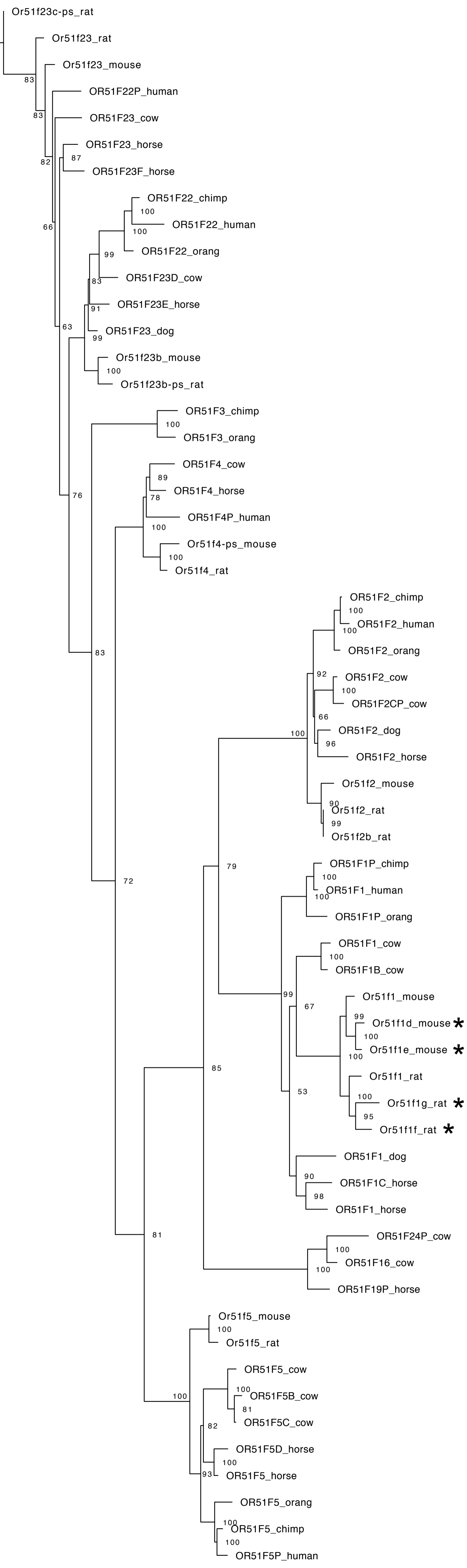
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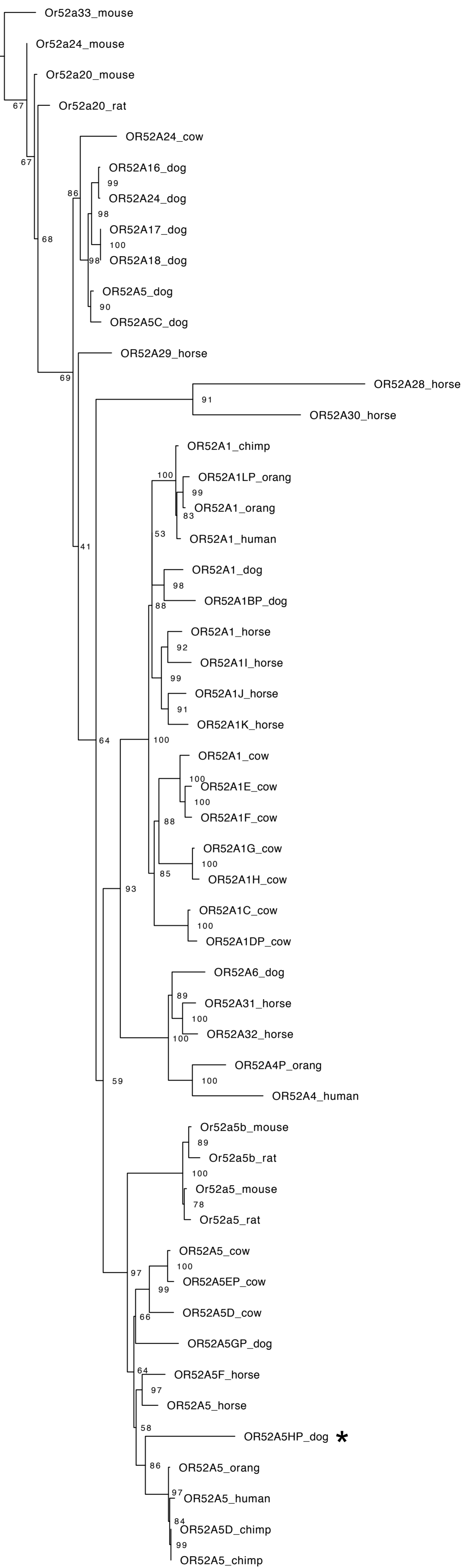
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OR1E2\_human

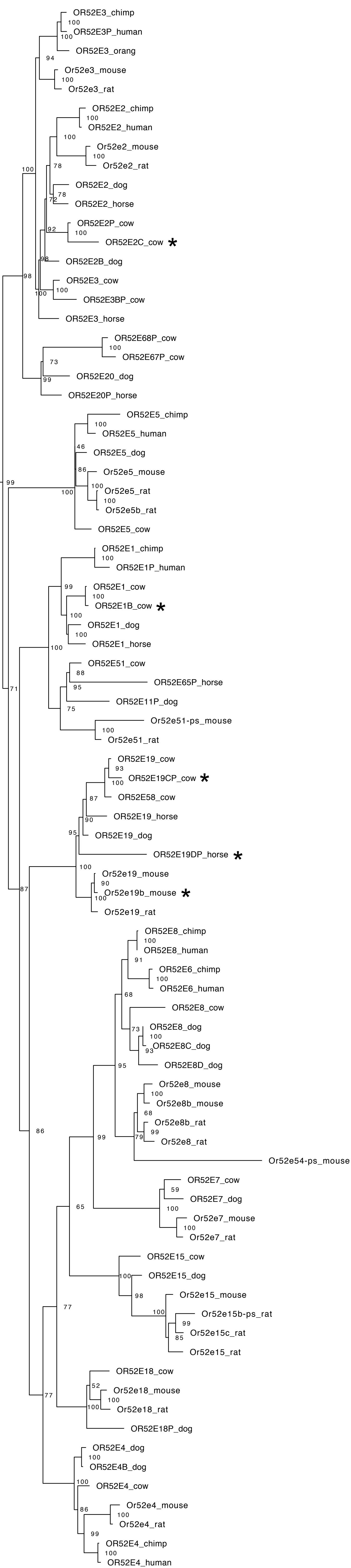


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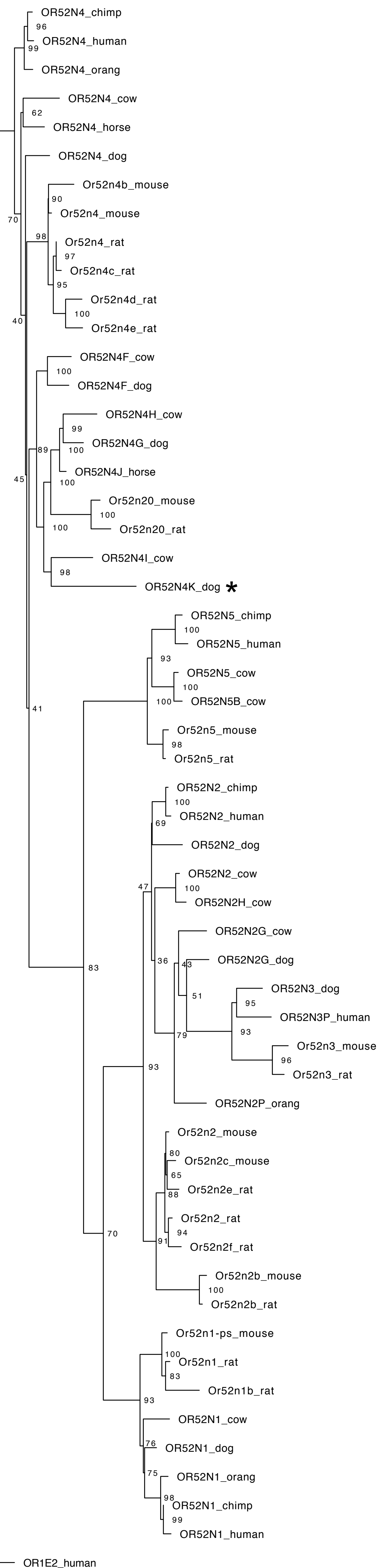




OR52E22\_dog



OR1E2\_human



OR1E2\_human

