

**Table S1. Motifs loss rates computed on F3 motif subset.**

Branch	N <sup>a</sup>		Rate <sup>b</sup>		HM/CM	p <sup>c</sup>
	HM	CM	HM	CM		
Chimpanzee	2019	2274	5.2%	5.1%	1.0	0.938
Hominini	2019	2274	5.1%	4.3%	1.2	0.071
Denisovan	1908	2177	0.8%	0.4%	2.0	0.078
Human	1908	2177	1.9%	0.4%	4.8	5.6 10 <sup>-6</sup>

<sup>a</sup> Intact motif count at ancestral node of the branch (cf. Figure 1)

<sup>b</sup> Motif loss rate along the branch

<sup>c</sup> P-value of proportion test comparing HM vs. CM loss rates along the branch