

Supplementary Material For:

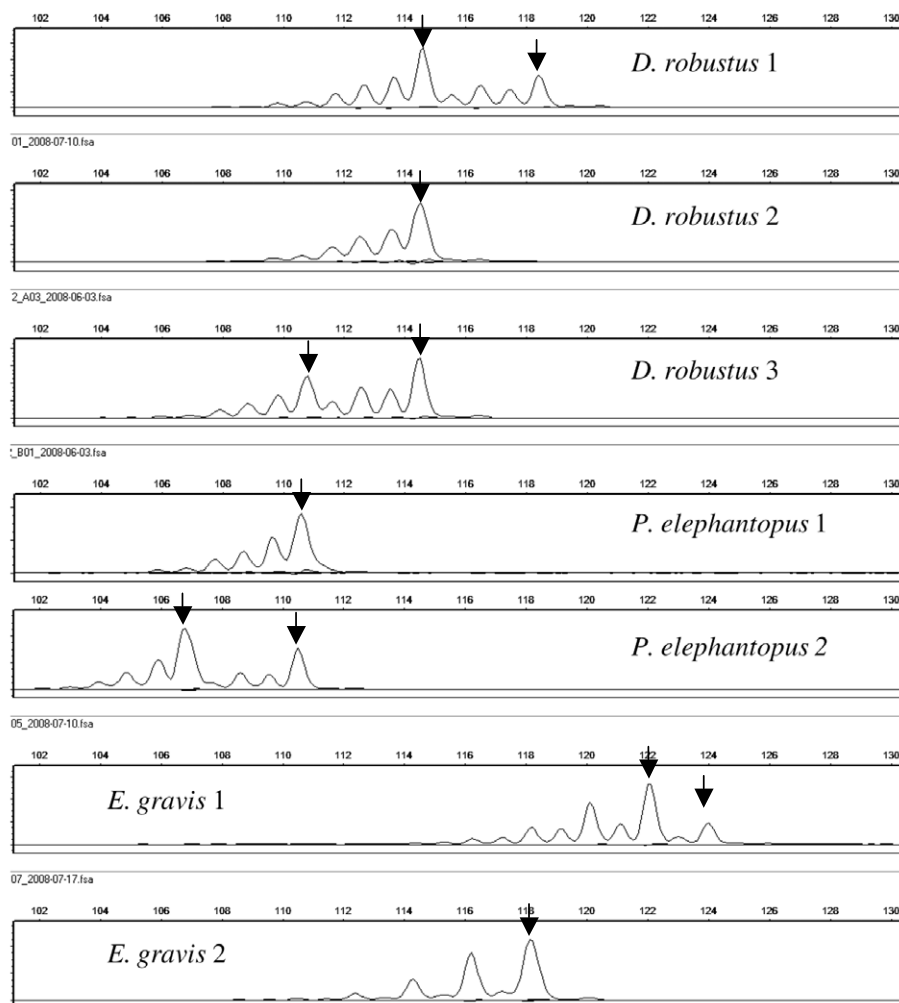
Identification of microsatellites from an extinct moa species using high-throughput (454) sequence data

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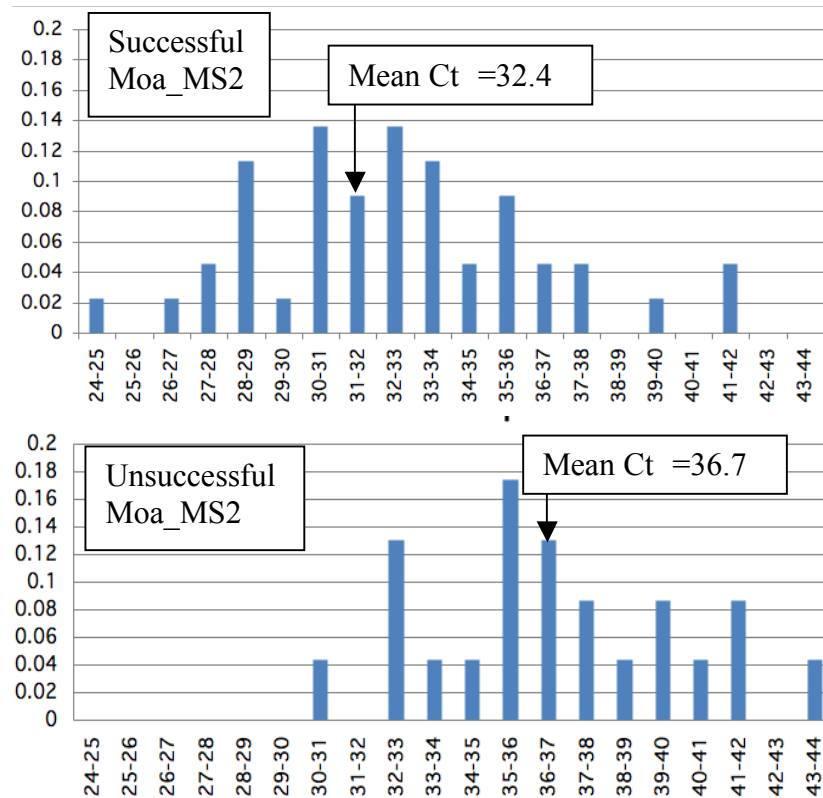
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Supplementary Figure 1. Chromatograms of the Moa_MS2 locus from seven moa fossils, representing three genera (Dinornis, Pachyornis and Euryapteryx). Genotypes are as follows (from top to bottom): 114/118 bp, 114/114 bp, 110/114 bp, 110/110 bp, 106/110 bp, 122/124 bp, 118/118 bp. The seven presented moa were chosen from a larger subset of individuals showing identical allele calls in three or more replicate PCR amplifications. Modified screen-capture from GENEMARKER version 1.5.



Supplementary Figure 3. Correlation of qPCR Ct values with success of amplification at the Moa_MS2 locus. Relative Ct values were determined using the mtDNA control region 262f/441r primer set (see Cooper et al. 2001). All 74 moa mentioned previously in the text amplified the moa mtDNA and Ct values were recorded for 64 individuals. Of these, 22 could not amplify the nuclear MS2 locus. The mtDNA Ct values connected with these 22 individuals (lower panel) proved significantly higher (corresponding to less template aDNA molecules) (*t*-test, $P = 0.000038$) compared with the 42 individuals (upper panel) with an associated successful Moa_MS2 amplification. This clearly demonstrates the link between the moa mtDNA preservation in the extract and the ability to amplify the microsatellite, and thus validate this nuclear locus as being of moa origin. x-axis, qPCR Ct values; y-axis, frequency.

Supplementary Table 1. Information on the Seven Moa Individuals for Which the Chromatographs Are Shown in Supplementary Figure 1

Taxon	Catalog No.	Locality	Collection	Genotype
<i>D. robustus</i> 1	PIBH 16	BHVS	UC	114/118 bp
<i>D. robustus</i> 2	AV 8490	PV	CM	114/114 bp
<i>D. robustus</i> 3	15025	PV	CM	110/114 bp
<i>P. elephantopus</i> 1	Std1	BHVS	UC	110/110 bp
<i>P. elephantopus</i> 2	AMNH 7305	PV	AMNH	106/110 bp
<i>E. gravis</i> 1	S 39934–12	BHVS	Te Papa	122/124 bp
<i>E. gravis</i> 2	S 39966	BHVS	Te Papa	118/118 bp

BHVS; Bell Hill Vineyard Swamp, North Canterbury, New Zealand. PV; Pyramid Valley, North Canterbury, New Zealand. UC; University of Canterbury, New Zealand. CM; Canterbury Museum, New Zealand. AMNH; American Museum of Natural History, New York. Te Papa; National Museum of New Zealand, Wellington.

Supplementary Table 2. Allele Frequency Table of the 52 Moa Fossils that Yielded a DNA Profile at the Moa_MS2 Locus

	Allele (bp)												
	106	110	114	116	118	120	122	124	126	128	130	134	136
DIRO (31)	0	0.03	0.55	0	0.21	0.03	0.02	0	0.06	0.03	0.02	0.02	0.06
EUGR (11)	0	0.18	0	0.05	0.14	0.18	0.09	0.27	0.05	0.05	0	0	0
PAEL (10)	0.40	0.60	0	0	0	0	0	0	0	0	0	0	0

Moa species representing three genera; Dinornis (DIRO), Euryapteryx (EUGR) and Pachyornis (PAEL). Number of individuals used to generate the frequencies are shown in brackets. The presence of private alleles in this table is strong evidence that the Moa_MS2 microsatellite has originated from moa DNA and not other DNA sources associated with the fossil.