

# MagSi-DNA Animal

## Application Note

**MagSi-DNA Animal** allows for fast and cost-effective extraction of DNA from various animal samples like blood, semen, hairs, saliva/swabs or lysed tissue. Exemplary application data of DNA yield, capillary electrophoresis based STR analysis, Illumina Infinium bead arrays and targeted sequencing data from various animal samples are presented below.

### Application data

#### DNA concentrations

Sample	DNA concentration <sup>1</sup> , ng/μL (Qubit)				
	Dog	Cat	Horse	Cattle	Swine
Blood, 20 μL	5.5	3.5	2.6	9.3	5
Semen, 30 μL	74	nt	170	26	11
Swab/Saliva <sup>2</sup> , 100 μL	2.2	5.6	nt	nt	nt
Hair, 8 pcs	nt	nt	11.8	5.7	13.7
Tissue, 4 mm	nt	nt	nt	17.8	3.1

Table 1: Results of typical DNA concentrations obtained from various sample materials. DNA purification was performed using a MagMAX™ Express-96 magnetic bead processor

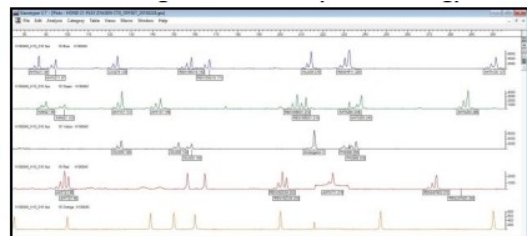
nt: not tested; <sup>1</sup>100 μL elution volume; <sup>2</sup> from DNA Genotek PG 100 tubes



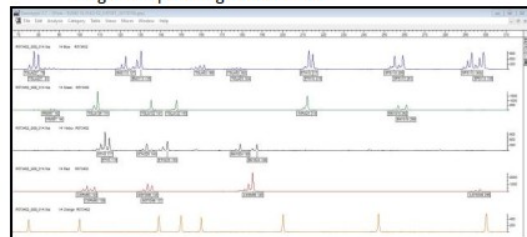
All marker systems were amplified demonstrating good DNA quality.

Obtained purified DNA was subjected to several down-stream assays:

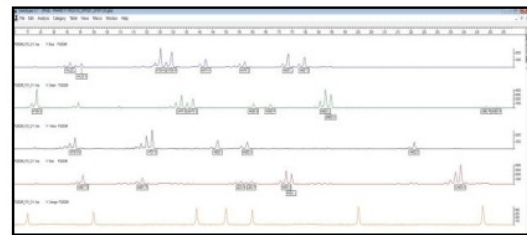
#### Parental testing by capillary electrophoresis



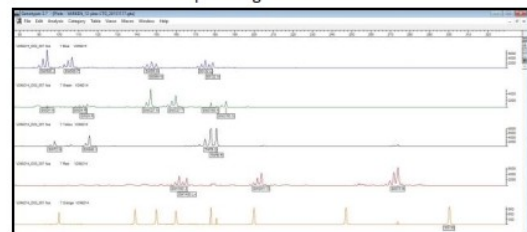
Dog-swab parentage verification



Cattle-Hair parentage verification



Horse-blood parentage verification



Pig-tissue parentage verification

Figure 1. Exemplary results from STR analysis (dog blood, Genotyper profile)

## Genotyping using Illumina Infinium bead array

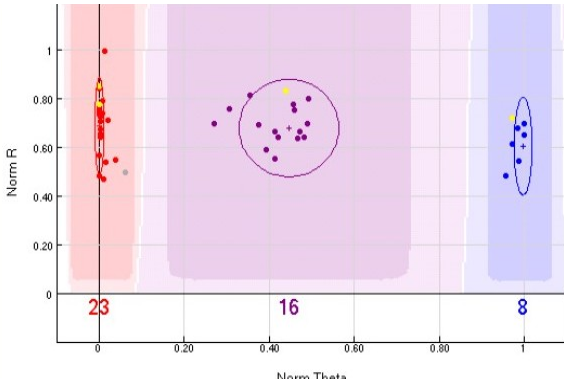


Figure 2: Exemplary results from 4 randomly selected DNA eluates obtained from bovine hair samples (highlighted in yellow).

Call rates (>0.989) and fluorescent intensities are comparable to a competitor's extraction method (not highlighted dots in Figure 2)



## Targeted genotyping by sequencing

Sample	Mapped Reads	On Target	Mean Depth	Uniformity
MagSi-DNA Animal	406.127	99.04 %	2.209,85	86,81 %
Competitor	298.798	95,05 %	1.456,87	83,40 %

Table 2: Targeted genotyping by sequencing (GBS) data. Randomly selected purified DNA samples obtained from dog hair, dog blood and dog semen were used for GBS using Thermo's AgriSeq™ reagents.

All parameters obtained from the MagSi-DNA Animal kit purified DNA samples are on average higher in comparison to the parameters obtained from a competitor's DNA purification kit.

## Conclusion

The DNA obtained from a variety of sample materials using the MagSi-DNA Animal kit is of good quality and suitable for different downstream assays commonly used in veterinary testing.

## Ordering information

Art. No.	Description	Amount
MDKT00150096	MagSi-DNA Animal	96 preps
MDKT00150960	MagSi-DNA Animal	10 x 96 preps

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