E.Z.N.A.® Plant DNA DS Kit

Specifications
For Research Use Only. Not for use in diagnostic procedures.

Features	Specifications
Starting Amount	Up to 50 mg wet tissue
Starting Material	Fresh, frozen, or dried plant tissue samples rich in polysaccharides, polyphenols, or those having a lower DNA content
Elution Volume	50-100 µL
Technology	HiBind® DNA Mini Column
Processing Mode	Manual
Throughput	1-24
Note	CTAB lysis

Overview

The E.Z.N.A.® Plant DNA DS Mini Kit is designed for efficient recovery of genomic DNA up to 30 kb in size from fresh, frozen, or dried plant tissue samples rich in polysaccharides, polyphenols or having a lower DNA content. Up to 50 mg wet tissue can be processed in less than 1 hour. The system combines the reversible nucleic acid-binding properties of the HiBind® matrix with the speed and versatility of spin column technology to eliminate polysaccharides, phenolic compounds, and enzyme inhibitors from plant tissue lysates. Purified DNA is suitable for PCR, restriction digestion, and hybridization applications.

This procedure relies on the well-established properties of the cationic detergent, cetyltrimethyl ammonium bromide (CTAB), in conjunction with the unique binding system to increase yields and provide high-quality DNA. The system eliminates the need for chloroform extractions traditionally associated with CTAB based lysis methods. Samples are homogenized and lysed in a high salt buffer containing CTAB and binding conditions are adjusted and DNA is purified using a HiBind® DNA Mini Columns. Salts, proteins, and other contaminants are removed to yield high-quality genomic DNA suitable for downstream applications such as endonuclease digestion, thermal cycle amplification, and hybridization applications.

- Rapid – Homogenizer Columns allow for faster processing
- Versatile – Reliable results from a variety of sample types
- Safe – No organic extractions
- High-quality – Purified DNA suitable for most applications

Cat. No.	Description	UOM
ES52322-5	Plant DNA DS Kit, 5 preps	Each
ES52322-50	Plant DNA DS Kit, 50 preps	Each

Product Data

DNA yields from various plant types are significantly hgiher using E.Z.N.A.® Plant DNA DS Kit than using a competing product.

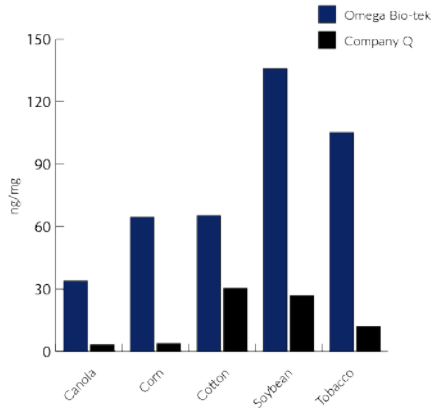

Figure 1. Comparison of DNA yield from multiple crops. 40-50 mg of respective fresh leaf tissue was extracted in triplicate according to manufacturer's recommended protocols and eluted in 100 µL. DNA analyzed with fluorescent DNA-based quantification method. Total yield was divided by total tissue amount to show ng of DNA per mg of leaf tissue.

DNA Yield and Quality from Potato Leaf and Corn Leaf Powder

Sample ID	Nucleic Acid Conc. (ng/µL)	260/280	260/230	Yield (µg)
Potato Leaf 1	33.1	1.74	1.29	3.31
Potato Leaf 2	31.9	1.80	2.01	3.19
Potato Leaf 3	36.6	1.74	2.34	3.66
Potato Leaf 4	38.6	1.74	1.80	3.85
Potato Leaf 5	32.3	1.73	1.25	3.23
Potato Leaf 6	52.3	1.66	1.26	.523
Corn Leaf 1	52.7	1.75	0.98	5.27
Corn Leaf 2	51.6	1.76	1.53	5.16
Corn Leaf 3	42.8	1.77	2.40	4.28
Corn Leaf 4	49.5	1.76	1.60	4.95
Corn Leaf 5	47.7	1.77	1.86	4.77
Corn Leaf 6	46.1	1.80	2.17	4.61
Corn Leaf 7	47.0	1.79	1.08	4.70
Corn Leaf 7	45.1	1.76	0.31	4.51

DNA purified using E.Z.N.A.® Plant DNA DS Kit has less PCR inhibitors than using a competing product.

qPCR from Corn Samples

Extraction Method for Corn	Average C_t			ΔC_t	
	1X	10X	100X	(10X-1X)	(100X-10X)
Omega Bio-tek	23.88	26.324	29.978	2.935	3.654
Company Q	28.703	30.573	35.038	1.870	4.465

Figure 2. qPCR comparison from corn samples. Real-time PCR with corn-specific primers was performed on triplicates of undiluted, 10-fold and 100-fold dilutions of DNA. DNA was isolated using Omega Bio-tek's E.Z.N.A.® Plant DNA DS Kit and a comparable column-based kit from Company Q. Omega Bio-tek's kit not only has significantly higher yields but also less qPCR inhibition when compared to that of Company Q's.

High Molecular Weight Genomic DNA

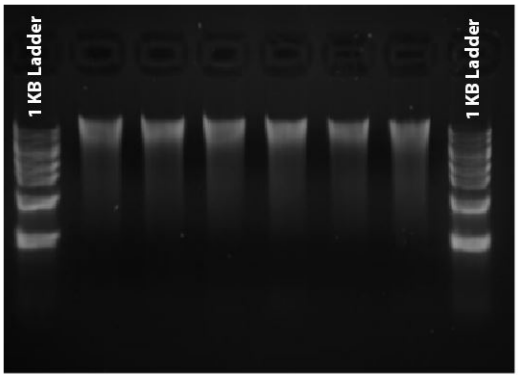

Figure 4. Genomic DNA was purified from 50 mg potato leaf with the E.Z.N.A. Plant DNA DS Kit. 5 µL eluate DNA was analyzed on a 1% Agarose gel.

Figure 3. Genomic DNA was purified from either 50 mg potato leaf or 30 mg corn leaf powder with the E.Z.N.A. Plant DNA DS Kit. DNA concentration determined by optical density measurements with NanoDrop® 2000c. Total elution volume was 100 µL.

DNA extracted using E.Z.N.A.® Plant DNA DS Kit is inhibitor free

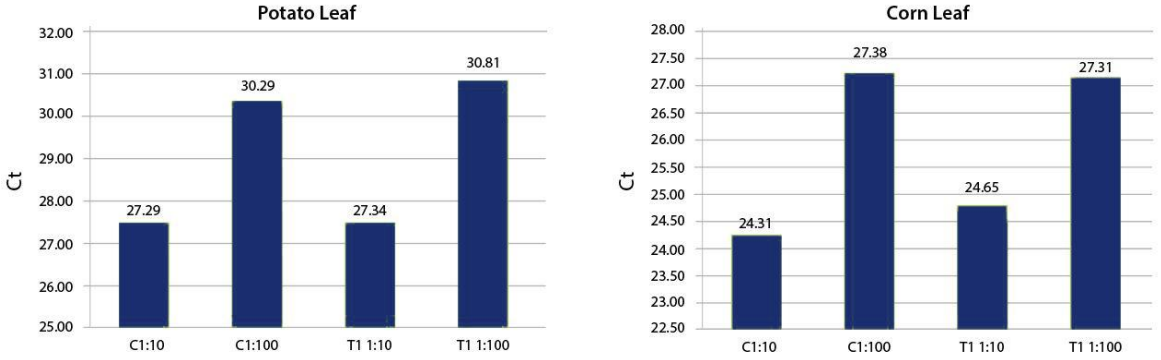

Figure 5. Genomic DNA was extracted from 50 mg potato leaf and 30 mg corn lead powder using the E.Z.N.A. Plant DNA DS Kit . 2 µL of Eluted DNA was diluted 10- and 100-fold and used as a template in a 20 µL SYBR® qPCR reaction. C: inhibitor-free control; T: gDNA samples. The Ct values increased by only 3 cycles per 10-fold dilution, which demonstrates that the template DNA in free of inhibitors