

Application Note

MagXtract® 3200, a fully automated nucleic acid extraction and PCR setup system using MACHEREY-NAGEL's NucleoMag® Plant kit.



CE IVD FDA



Magnetic Bead

Fast and efficient automated nucleic acid purifications from various bio-specimens.



PCR Setup

Automatically and precisely dispense eluates, PCR reagents into PCR plate.



Open Platform

Comprehensive protocols creation and adaption for purification and PCR setup.



Whirl Mixing

Patented whirl-and-stir mixing approach to maximize the efficiency of purifications.



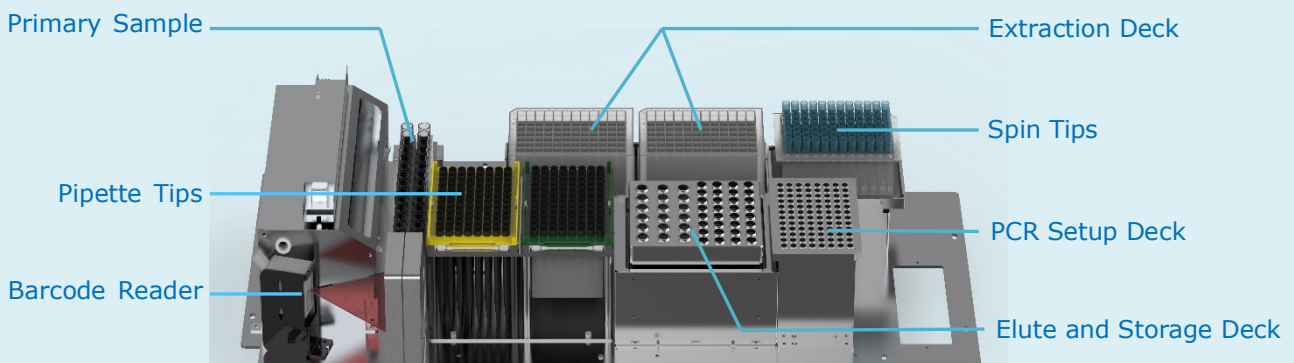
UV / HEPA

Safeguard against the contamination with UV light and HEPA.



Cool Station

Cooling control for eluates storage and reagent kits to maintain samples stability.



NucleoMag® DNA Plant

Automated extraction of genomic DNA from plant samples on the **MagXtract 3200**

Introduction

MACHEREY-NAGEL developed the magnetic bead based NucleoMag® Plant kit allowing the automated purification of genomic DNA from plant sample. Chroma ATE provides high quality automated instrument, MagXtract 3200, for nucleic acid extraction. Through using NucleoMag® Plant kit combing with MagXtract 3200, molecular biological scientists will conduct research or examinations in a safe, accurate, and efficient procedure.

MagXtract 3200 Specification

Description	Automated nucleic acid extraction and liquid handling system
Capacity	Max. 32, 16-sample per run
Weight	70 kg (± 5kg)
Dimensions	721mm x 530mm x 567mm (W x D x H)

Excellent Performance

We evaluated the performance of purification of genomic DNA from 50mg plant using the NucleoMag® Plant kit and MagXtract 3200. High yield and purity of extracted genomic DNA from plant samples are shown below table. The extracted DNA for downstream qPCR application is also conducted as below figure.

No	Sample (50mg)	Yield (µg)	Conc. (ng/µl)	Purity (260/280)	Purity (260/230)
1	Soybean sprout	11.2	139.6	2.164	2.126
2	Soybean	18.4	230	2.156	1.942
3	Brassica juncea	6.9	86.7	2.146	1.979
4	Bok choy	7.9	98.8	2.152	2.022
5	White beech mushroom	10.3	129.1	2.213	2.137
6	Sweet potato	4.8	59.7	2.109	1.739
7	Cucumber	2.4	29.4	2.078	1.705

Table. High yield and purity of extracted genomic DNA from plant. Different kind of plants were added into NucleoMag® Plant kit and followed the extraction procedure on the MagXtract 3200 instrument. Genomic DNA were measured by Nanodrop ONE (ThermoFisher).

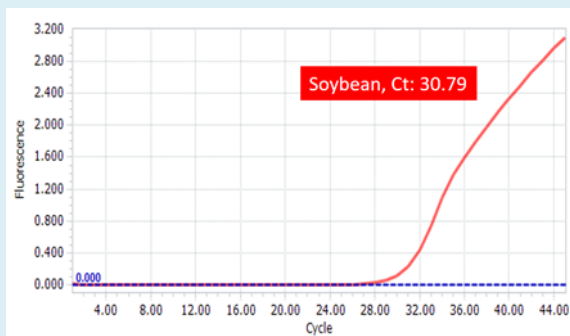


Figure. Downstream qPCR application.

Soybean action gene expression in soybean extracted gDNA and the template in qPCR reaction are normalized to 10ng/reaction.

Open System and Automation Solution

MagXtract 3200 allows the authorized user to edit protocols including nucleic acid extraction and PCR preparation. High flexibility application can fit most magnetic based extraction kits and PCR reagent kits.

Open System – Based on MACHEREY-NAGEL extraction kit IFU, optimize the detailed factor to make excellent performance.

Automation Solution – Replace the manual steps including not only extraction but also PCR preparation.

1. Nucleic acid binding with beads
2. Collecting beads
3. Washing
4. Vaporing (drying)
5. Eluting

6. Transferring eluate to storage vial
7. Dispensing qPCR premix to each vial
8. Adding template to each vial

It saves about 90% hands-on time!

MagXtract 3200 GUI

Three operating modes: full run, preparation and extraction.

MagXtract 3200 software provides the protocol-based control to streamline the workflows. The stepwise GUI and touchscreen control guide the user through the complication of the assay setup, from sample loading to the consumable placement.

For more information please contact

MACHEREY-NAGEL Bioanalysis technical support: bio-tech@mn-net.com

Chroma ATE Technical support: tech-support.LSI@chroma.com.tw

Order Information

Product	REF
NucleoMag® Plant	744400.1 (96 preps)
	744400.4 (384 preps)
	744400.24 (2304 preps)
MagXtract 3200	9-49200002
(CE-IVD)	
Spin tip in box	A94-000135
Filtered tip (50µl)	A94-000130
Filtered tip (1000µl)	A94-000131
96 deep well plate	Please contact Chroma ATE
Customized accessories	
Sample drawer	13 x 75 mm / 16 x 100 mm
Elute and storage deck	We can modify the number of hole to fit your application