

Application Note

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



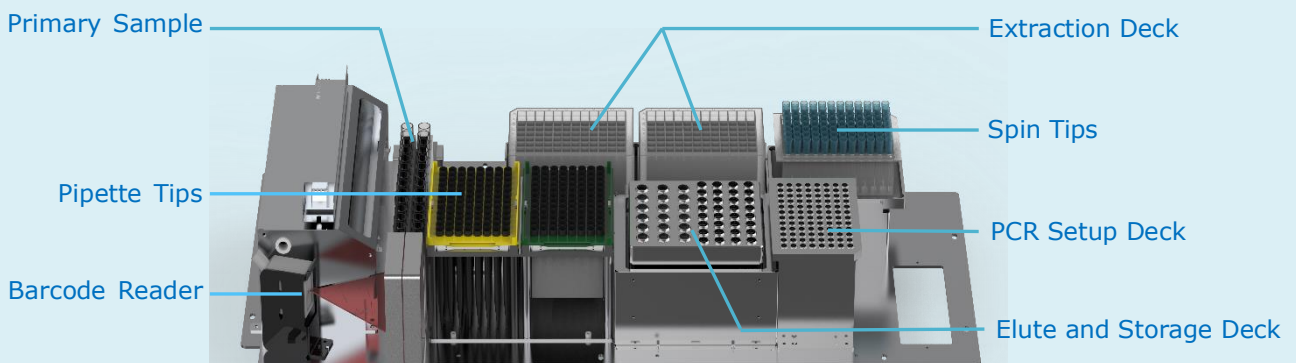
UV / HEPA

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 Food

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

Introduction

MACHEREY-NAGEL developed the magnetic bead based NucleoMag® DNA Food kit allowing the automated purification of genomic DNA from food sample. Chroma ATE provides high quality automated instrument, MagXtract 3200, for nucleic acid extraction. Through using NucleoMag® DNA Food kit combining 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 200mg food samples using the NucleoMag® DNA Food kit and MagXtract 3200. High yield and purity of extracted genomic DNA from plant based and animal based food are shown below table. The extracted DNA for downstream qPCR application is also conducted as below figure.

Sample (200mg)	Sample Name	Conc. (ng/μl)	Yield (μg)	Purity (260/280)
Plant based food	Soymilk (1)	618.1	49.4	2.17
	Soymilk (2)	720.2	57.6	2.11
	Soybean pudding	179.9	14	1.88
	Dried tofu	185.7	14.9	1.83
Animal based food	Chicken	1258.3	100.6	2.12
	Sausage	217.9	17.4	2.01

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

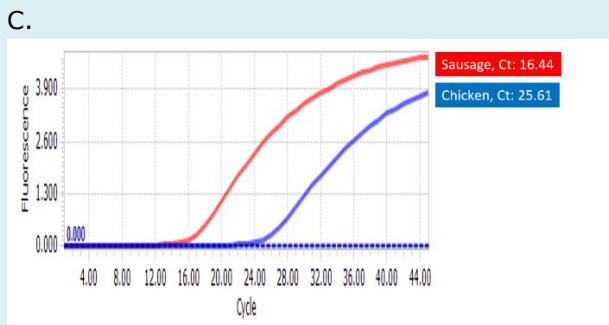
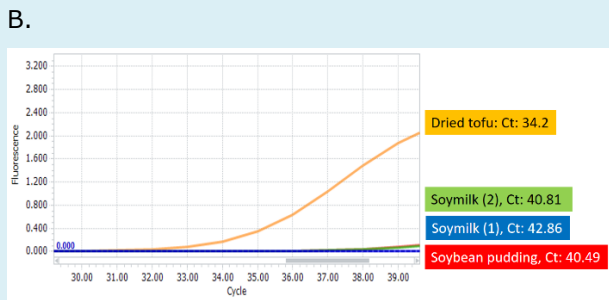
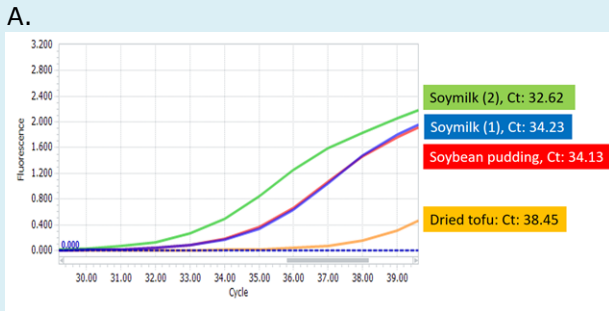


Figure. Downstream qPCR application. All the gDNA template in qPCR reaction are normalized to 10ng/reaction. A. Soybean actin gene expression in four plant based food sample. B. CP4 EPSPS gene expression in four plant based food sample. CP4 EPSPS gene is common in GMO. Expression of CP4 EPSPS gene results in glyphosate-tolerant crops. So, more effective weed control will be applied in agriculture. C. Sus scrofa 12S ribosomal RNA gene expression in sausage and Gallus gallus growth hormone gene expression in chicken.

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® DNA	744945.1 (96 preps)
Food	744945.4 (384 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