

Application Note

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



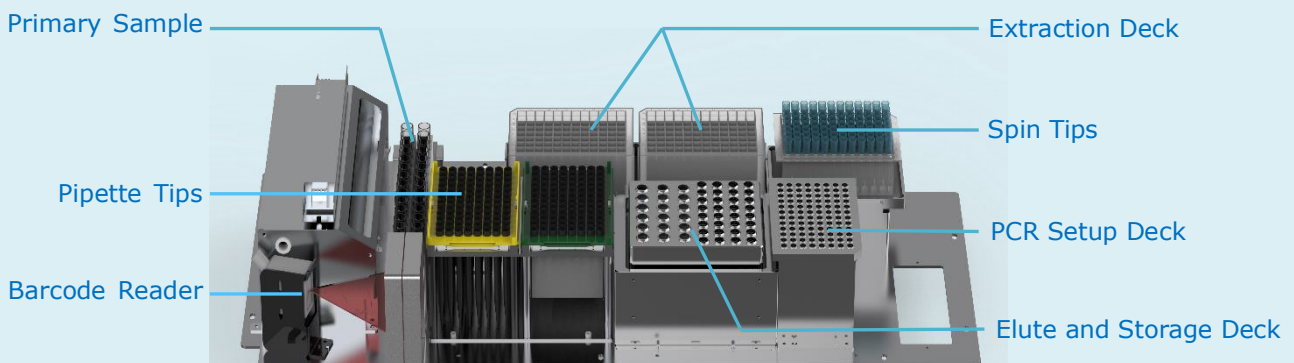
UV / HEPA

Safeguard against the contamination with UV light and HEPA.



Cool Station

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



NucleoMag[®] Tissue

Automated extraction of DNA from chicken and pork samples on the **MagXtract 3200**

Introduction

MACHEREY-NAGEL developed the magnetic bead based NucleoMag[®] Tissue kit allowing the automated purification of genomic DNA from tissue, cell and bacteria samples. Chroma ATE provides high quality automated instrument, MagXtract 3200, for nucleic acid extraction. Through using NucleoMag[®] Tissue kit combining with MagXtract 3200, laboratory scientists will conduct clinical research 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 DNA from chicken and pork muscle tissue samples using the NucleoMag[®] Tissue kit and MagXtract 3200. Before automatic extraction

process, the lysis condition per sample is mixed with 25µl Proteinase K and 200µl T1 at 56°C for 1 hour. High yield and purity of extracted genomic DNA from muscle tissue samples are shown in the table below. The extracted DNA for downstream qPCR application is also conducted as below figure.

Sample Name	Conc. (ng/µl)	Yield (µg)	Purity (260/280)	Purity (260/230)
Chicken 11.4mg	73.30	6.60	2.04	1.83
Pork 11mg	65.30	5.90	1.94	1.51

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

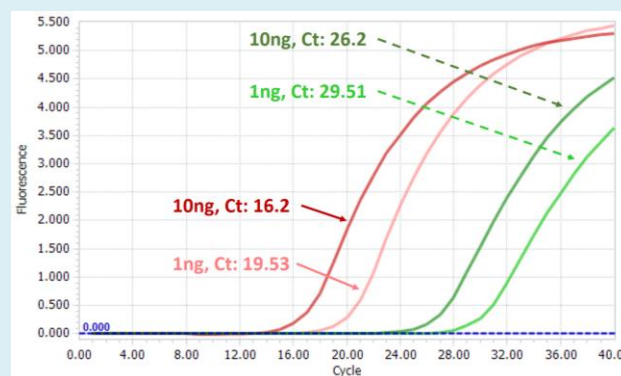


Figure. Expression of specific gene with high PCR efficiency.

Red curve: sus scrofa 12S ribosomal RNA gene expression in pork DNA sample; green curve:

gallus gallus growth hormone gene expression in chicken DNA sample; qPCR mastermix: GoTaq qPCR Master Mix, Promega.

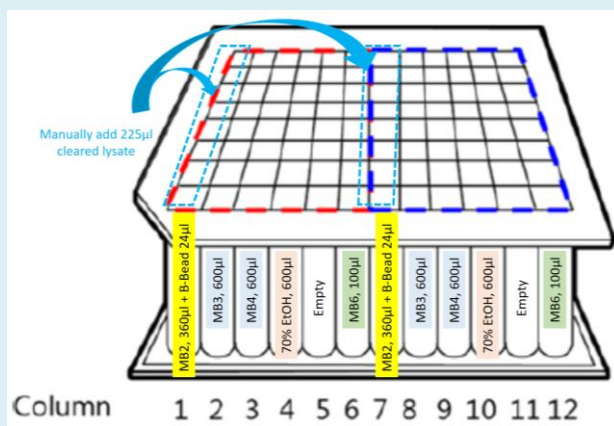
Open System and Automation Solution

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.

The arrangement of the extraction buffer in a 96 deep-well plate is as shown below.



Automatic steps:

1. Binding
2. Collecting beads
3. Washing
4. Vaporizing (drying)
5. Eluting
6. Transferring eluate to storage vial
7. Dispensing qPCR premix to each vial
8. Adding template to each vial

Note 1. The primary sample contains a little tissue/cell debris, even though centrifugation could separate clear lysate and we do not recommend to transfer the samples using MagXtract 3200 because the debris is easy to suspend and aspirate, and it could cause clot error in MagXtract 3200.

Note 2. The MB5 rinse step was replaced with a 70% ethanol wash and drying step in favor of optimal yield and purity.

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.

Order Information

Product	REF
NucleoMag® Tissue	744300.1 (96 preps)
	744300.4 (4 x 96 preps)
	744300.24 (24 x 96 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 holes to fit your application

For more information please contact

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