

Application Note

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



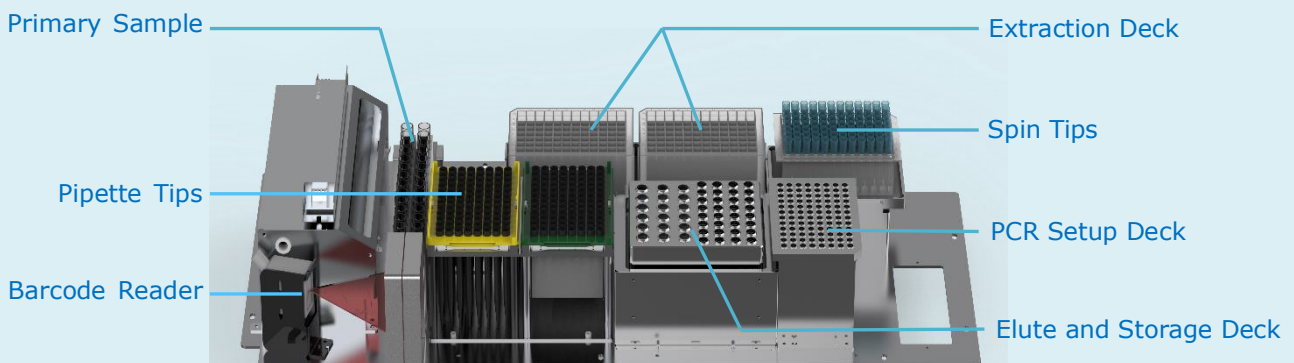
UV / HEPA

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 FFPE

Automated extraction of mouse DNA from formalin-fixed, paraffin-embedded (FFPE) tissue samples on the **MagXtract 3200**

Introduction

Due to the growing of precision medicine concepts and methods, the demands of DNA purification from FFPE tissue samples elevated currently and the downstream application of purified DNA includes qPCR, NGS and mutation profiling. MACHEREY-NAGEL developed the magnetic bead based NucleoMag® DNA FFPE kit for the isolation of DNA from FFPE specimens. The procedure replaces the use of flammable and malodorous xylene or d-limonene commonly used for deparaffinization. NucleoMag® DNA FFPE employs the odorless and patented Paraffin Dissolver and allows effective lysis in a convenient two-phase system. Furthermore, it uses an easy, effective method to isolate DNA from FFPE tissue samples and also allows the automated purification application. Chroma ATE provides the high quality automated instrument, MagXtract 3200, for nucleic acid extraction. Through using NucleoMag® DNA FFPE 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 mouse DNA from FFPE tissue sample using the NucleoMag® DNA FFPE kit and MagXtract 3200. We obtained 0.53µg mouse DNA (13.377ng/µl) from 0.5mg FFPE muscle tissue sample. A subsequent qPCR analysis targeting a GAPDH amplicon showed expected good for the tested FFPE samples.

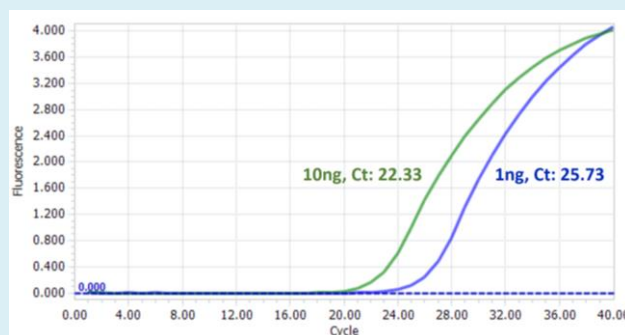


Figure. Expression of mouse GAPDH gene with high PCR efficiency. Green curve: 10ng mouse DNA per vial; blue curve: 1ng mouse DNA per vial. qPCR mastermix: GoTaq qPCR Master Mix, Promega.

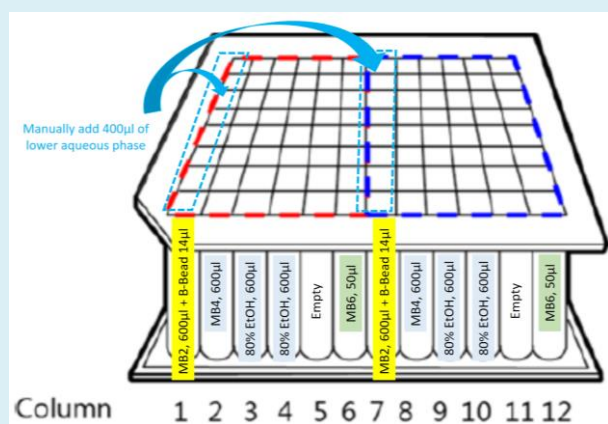
Open System and Automation Solution

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. Vaporing (drying)
5. Eluting

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

Note. The primary sample is the lower aqueous phase of deparaffinized sample and we do not recommend that to do sample transferring using MagXtract 3200 because the level detection function cannot distinguish between lower and upper aqueous phase.

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® DNA	744320.1 (96 preps)
FFPE	744320.4 (4 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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