REF 800801 NeuMoDx™ HAdV Calibrator Kit

Rx Only

CAUTION: For US Export Only

IVD For *in vitro* diagnostic use with the NeuMoDx™ 288 and NeuMoDx™ 96 Molecular Systems

This package insert must be read carefully prior to product use. Package insert instructions must be followed accordingly. Reliability of assay results cannot be guaranteed if there are any deviations from the instructions in this package insert.
For detailed instructions, refer to the NeuMoDx™ 288 Molecular System Operator's Manual; P/N 40600108
For detailed instructions, refer to the NeuMoDx™ 96 Molecular System Operator's Manual; P/N 40600317
See also the NeuMoDx™ HAdV Quant Test Strip Instructions For Use (package insert)

CE

INTENDED USE

The NeuMoDx™ HAdV Calibrator Kit is intended for use with the NeuMoDx™ HAdV Quant Assay to establish a calibration coefficient associated with a particular lot of the NeuMoDx™ HAdV Quant Test Strip and used in conjunction with a standard curve to perform an accurate quantitative in vitro diagnostic test on the NeuMoDx™ 288 Molecular System or NeuMoDx™ 96 Molecular System (NeuMoDx™ System(s)) to quantify Adenovirus (AdV) DNA from human Plasma and Urine specimens. The AdV in these calibrators has been calibrated to a commercial encapsulated and heat inactivated Adenovirus standard, expressed in copies/mL.

SUMMARY AND EXPLANATION

The NeuMoDx™ HAdV Calibrator Kit is comprised of a set of 3 low positive calibrators, 3 high positive calibrators, one NeuMoDx™ HAdV Calibrator Buffer and 6 empty tubes. One Calibrator set is composed of one low positive and one high positive calibrator sealed in a single aluminum pouch with a small orange desiccant sachet. One calibrator set is processed every 90 days or with every new lot of NeuMoDx™ HAdV Quant Test Strips to establish a valid calibration of the NeuMoDx™ HAdV Quant Assay. Both AdV calibrators contain a dried pellet of synthetic AdV target nucleic acid at 5 $\log_{10}$ copies/mL or 3 $\log_{10}$ copies/mL for the High and Low Calibrator, respectively. The dried AdV Calibrators must be hydrated using NeuMoDx™ HAdV Calibrator Buffer present in the kit.

The NeuMoDx™ HAdV Quant Assay combines automated DNA extraction, amplification and detection by real-time PCR to enable the quantitative detection of AdV DNA in human plasma/serum and urine specimens.

The processed NeuMoDx™ HAdV Calibrator will be applied to the stored standard curve and used to generate a calibration coefficient, which is used to automatically adjust the standard curve for slight variations across systems or test strip lots. Accurate quantitation of the AdV DNA in the human clinical samples being tested can then be provided utilizing both the standard curve and the system/lot specific calibration coefficient.

In addition, the traceability of these calibrators to a commercial encapsulated and heat inactivated Adenovirus standard, in copies/mL commercial Standard enables the laboratories to ensure that the testing results obtained from use of the NeuMoDx™ HAdV Quant Test Strips are consistent across reagent lots, systems, and operators.

PRINCIPLES OF THE PROCEDURE

The NeuMoDx™ HAdV Calibrator Kit allows for the verification of efficacious nucleic acid extraction as well as the real-time PCR amplification and detection process, thereby enabling calibration of the entire testing process. One set of these external calibrators – consisting of 1 high calibrator and 1 low calibrator – is to be processed, every 90 days or with the change of a system, software or test strip reagent lot; the system will automatically process each calibrator in triplicate. Such routine processing of the NeuMoDx™ HAdV Calibrator Kit enables the laboratories to ensure efficacy of the test results for human clinical specimens processed within the validity period.

Software on the NeuMoDx™ System automatically alerts the operator when a calibration is required. During processing, criteria for acceptance of the calibrator are automatically verified by the NeuMoDx™ System software. If less than two of the calibrator replicates are valid, the software automatically invalidates that calibrator. The invalidated high and/or low calibrator must be retested using new calibrator(s).

Upon successful processing of the NeuMoDx™ HAdV Calibrator, the system software automatically records the validity of the processed calibrators for a period of 90 days unless there is a change to the system that causes the validity period to expire. The NeuMoDx™ System software will automatically notify the user to process these external calibrators when the previously processed calibrator validity period has expired.

REAGENTS / CONSUMABLES

Material Provided

REF	Contents	Tests per unit	Total tests per kit
800801	NeuMoDx™ HAdV Calibrator Kit Single use sets of HAdV High and Low Calibrators to establish validity of standard curve (1 vial of 5 $\log_{10}$ copies/mL and 1 vial of 3 $\log_{10}$ copies/mL dried DNA = 1 set)	1 set	3

Reagents and Consumables Required but Not Provided (Available Separately from NeuMoDx)

REF	Contents
200700	NeuMoDx™ HAdV Quant Test Strip *Dried PCR reagents containing HAdV-specific TaqMan® probes and primers along with SPC1-specific TaqMan® probe and primers.*
100200	NeuMoDx™ Extraction Plate *Dried paramagnetic particles, lytic enzyme, and sample process controls*
900801	NeuMoDx™ HAdV External Control Kit *Single use sets of Positive and Negative Controls to establish daily validity of NeuMoDx HAdV Quant Assay*
400500	NeuMoDx™ Lysis Buffer 2
400100	NeuMoDx™ Wash Reagent
400200	NeuMoDx™ Release Reagent
100100	NeuMoDx™ Cartridge
235903	Hamilton CO-RE Tips (300 µL) with Filters
235905	Hamilton CO-RE Tips (1000 µL) with Filters

Instrumentation Required

NeuMoDx™ 288 Molecular System [REF 500100] or NeuMoDx™ 96 Molecular System [REF 500200]

WARNINGS & PRECAUTIONS

- The NeuMoDx™ HAdV Calibrator Kit is for *in vitro* diagnostic use only with the NeuMoDx™ HAdV Quant Test Strip as implemented on the NeuMoDx™ Systems.
- Do not use the NeuMoDx™ HAdV Calibrator Kit after the listed expiration date.
- Do not use the NeuMoDx™ HAdV Calibrator Kit if the safety seal is broken or if the packaging is damaged upon arrival.
- Do not use consumables or reagents if the protective pouch is open or broken upon arrival.
- Do not mix up reagents for amplification from other commercial kits.
- Keep the NeuMoDx™ HAdV Calibrator protected by humidity in their aluminum envelopes with dedicated small orange desiccant sachet.
- Because the calibrators contain AdV target material, they should be handled carefully as cross-contamination with test samples could produce a false-positive result.
- Always handle specimens as if they are infectious and in accordance with safe laboratory procedures such as those described in in accordance with the OSHA Standard on Bloodborne Pathogens[1], Biosafety Level 2[2] or other appropriate biosafety practices[3,4] should be used for materials that contain or are suspected of containing infectious agents.
- Do not pipette by mouth. Do not smoke, drink, or eat in areas where specimens or reagents are being handled.
- Dispose of unused reagents and waste in accordance with country, federal, provincial, state and local regulations.
- Clean, powder-free, nitrile gloves should be worn when handling all NeuMoDx™ reagents and consumables.
- Wash hands thoroughly after performing the test.
- Safety Data Sheets (SDS) are provided for each reagent (as applicable) at www.neumodx.com/client-resources.
- A vertical bar in the text margin indicates changes in comparison to the previous I.F.U version.
- Do not reuse.

PRODUCT STORAGE, HANDLING & STABILITY

- The NeuMoDx™ HAdV Calibrator Kit is shipped at Room Temperature (+15 °C/+30 °C).
- It is recommended that the NeuMoDx™ HAdV Calibrator Kit be stored at +15 °C/+30 °C to ensure stability.
- Calibrator vials (reconstituted calibrators and/or empty tubes) are intended for single use only. After use, discard the residue of the reconstituted NeuMoDx™ HAdV Calibrator.
- Discard any unused material after use in biohazard waste as the material contains non-infectious target DNA and could cause a contamination risk.

INSTRUCTIONS FOR USE

1. NeuMoDx™ HAdV Calibrator Kit (REF 800801) must be processed under the following scenarios:
    a. Validity of previously established calibration has expired (past 90 days).
    b. Calibration validity has not been established on the NeuMoDx™ System(s).
    c. Calibration validity has not been established with a new lot of NeuMoDx™ HAdV Quant Test Strips.
    d. The NeuMoDx™ System software has been modified.
2. If a valid calibration does not exist, the NeuMoDx™ System will prompt the user to process calibrators (and external controls) before sample results can be reported.
3. If calibrators are required, reconstitute the NeuMoDx™ HAdV calibrator (1 high calibrator and 1 low calibrator per reagent lot) following the steps below:

NeuMoDx HAdV Calibrator	Label Color Scheme
High Calibrator (HC)	Green
Low Calibrator (LC)	Blue

4. Cut the aluminum pouches at the point indicated by the lateral notches.
5. Remove NeuMoDx™ HAdV Calibrator tubes (HIGH and LOW) from the pouches immediately before use.
6. Prior to use, always ensure that the pouches are well sealed and that the desiccant sachets are still inside. Use only undamaged packages.
7. Dispose of the aluminum pouches and their contents if the desiccant sachets turn from orange to green.
8. Centrifuge each NeuMoDx™ HAdV Calibrator tube (HIGH and LOW) prior to opening to ensure that DNA is at the bottom of the tube;
9. Vortex the NeuMoDx™ HAdV Calibrator Buffer and reconstitute each NeuMoDx™ HAdV Calibrator tube (HIGH and LOW) with 1900 µL of NeuMoDx™ HAdV Calibrator Buffer. It is advisable to reconstitute the calibration tubes immediately before use. The reconstituted calibrator tubes are intended for single use only.
10. Cap each Calibrator tube and vortex it for 30 seconds until the dried DNA is resuspended.
11. Centrifuge each NeuMoDx™ HAdV Calibrator tube for few seconds at medium speed to remove any residue from the cap and eliminate bubbles/foam.
12. Incubate the resuspended calibrators at room temperature for 20 minutes prior to proceeding to the next step.
13. Vortex each NeuMoDx™ HAdV Calibrator tube for few seconds at medium speed and centrifuge them for few seconds at medium speed.
14. Transfer all the contents of the tube into a secondary empty labelled tube (NeuMoDx™ HAdV High Calibrator (HC) tube, NeuMoDx™ HAdV Low Calibrator (LC) tube included in the kit). It is advisable to transfer each reconstituted calibrator into the secondary empty tube immediately before use. Both reconstituted calibrators and secondary tubes are intended for single use only.
15. Load the calibrator tubes into a standard 32-Tube Specimen Carrier.
16. Place the Specimen Tube Carrier on the Autoloader shelf and use the touchscreen to load the carrier into the NeuMoDx™ System.
17. The NeuMoDx™ System will recognize the barcodes and start processing the specimen tubes unless reagents or consumables required for testing are not available.
18. To generate valid results, at least 2 out of the 3 replicates must yield results within predefined parameters. The low calibrator nominal target is 3.0 $\log_{10}$ copies/mL and the high calibrator nominal target is 5.0 $\log_{10}$ copies/mL.

NeuMoDx HAdV Calibrator	HAdV Result
High Calibrator (HC)	2/3 calibrators Valid
Low Calibrator (LC)	2/3 calibrators Valid

19. Discrepant result handling for calibrators should be performed as follows:
    a. If one or both the calibrators fails the validity check, repeat processing of the failed calibrator(s) using a new vial. In the event one calibrator fails validity, it is possible to only repeat the failed calibrator as system does not require the user to run both calibrators.
    b. If problem persists, contact NeuMoDx™ Molecular, Inc.
20. NeuMoDx™ HAdV External Control Kit (REF 900801) must be processed after calibrator validity has been established, prior to obtaining test results from human clinical samples.

LIMITATIONS

- The NeuMoDx™ HAdV Calibrator can only be used in conjunction with the NeuMoDx™ HAdV Quant Test Strips on the NeuMoDx™ System.
- A valid calibration of the NeuMoDx™ HAdV Quant Test Strip using NeuMoDx™ HAdV Calibrator Kit (REF 800801) is required before the NeuMoDx™ HAdV External Control Kit (REF 900801) can be processed.
- Erroneous results could occur from improper handling, storage, or other technical error.
- Operation of the NeuMoDx™ System is limited to use by personnel trained on the use of the NeuMoDx™ System.

REFERENCES

1. US Department of Labor, Occupational Safety and Health Administration. 29 CFR Part 1910.1030. Bloodborne Pathogens, https://www.osha.gov/lawsregs/regulations/standardnumber/1910/1910.1030
2. US Department of Health and Human Services. Biosafety in Microbiological and Biomedical Laboratories, 5th Ed. Washington,DC: US Government Printing Office, January 2009.
3. World Health Organization. Laboratory Biosafety Manual, 3rd ed.Geneva: World Health Organization, 2004.
4. CLSI. Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guideline — Fourth Edition (M29-A4). Clinical and Laboratory Standards Institute, 2014.

TRADEMARKS

SYMBOLS

SYMBOL	MEANING
Rx Only	Prescription use only
	Manufacturer
	Distributor
IVD	*In vitro* diagnostic medical device
REF	Catalog number
LOT	Batch code
	Consult instruction for use
	Caution, consult accompanying documents
	Temperature limitation
	Keep dry
	Do not re-use
	Do not expose to the light
	Contains sufficient for <*n*> tests
	Use by

SENTINEL CH. S.p.A.
Via Robert Koch, 2
20152 Milano, Italy

www.sentineldiagnostics.com

NeuMoDx Molecular, Inc.
1250 Eisenhower Place
Ann Arbor, MI 48108, USA

+1 888 301 NMDX (6639)
techsupport@neumodx.com

Vigilance reporting: www.neumodx.com/contact-us

Patent: www.neumodx.com/patents