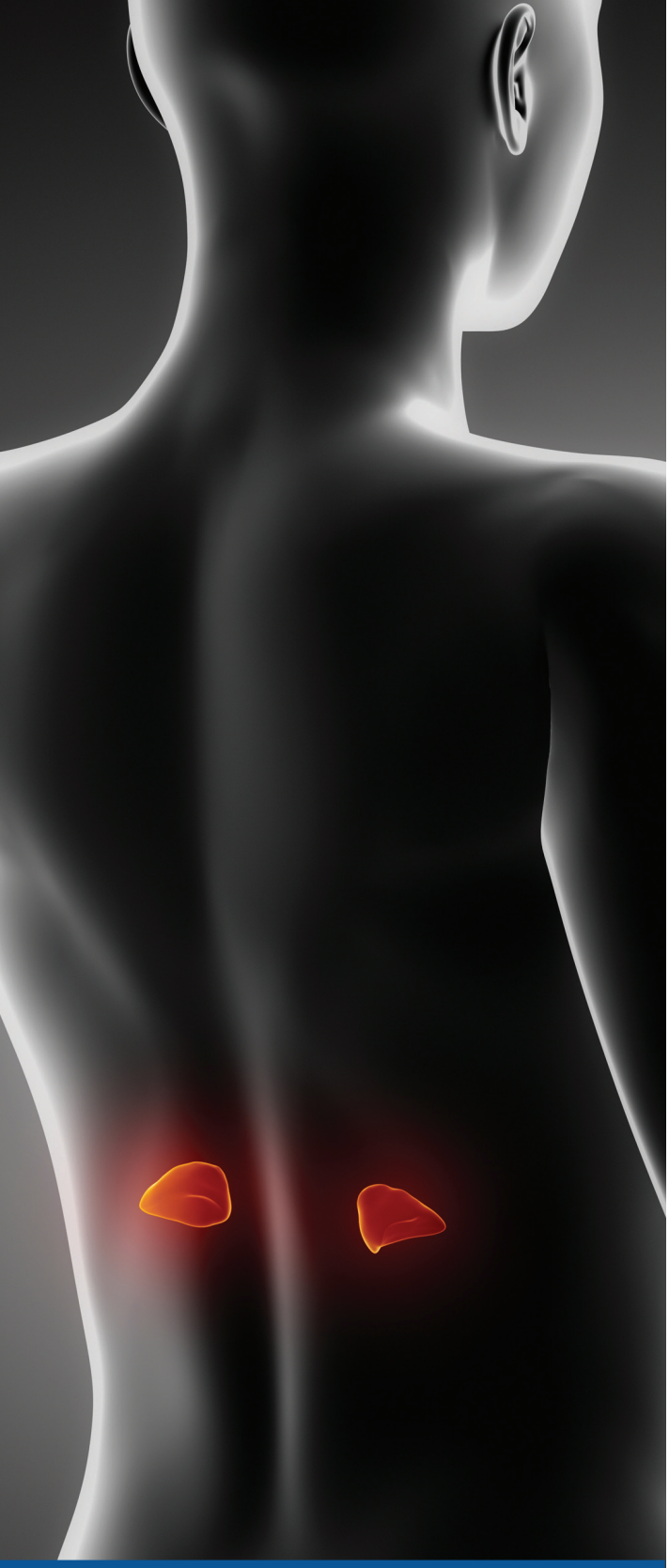

# SENSITIVE MEASUREMENT OF PLASMA CATECHOLAMINES BY 2D-LC-MS/MS

FOR MEDICAL RESEARCHERS

www.nmslabs.com

## Supporting Nationally Respected Researchers

Catecholamines have become the focus of research in recent years, making the need for innovative testing greater than ever before. Investigations range from molecular biology to behavior and clinical studies.

**Integrated approaches required.** It has been increasingly apparent that neuronal systems using catecholamines have much in common. Yet, investigators who focus on particular catecholamines or on different actions of the same catecholamine are often unaware of complementary aspects of catecholamine research. Continued progress of this research will require increasingly integrated approaches in studies of catecholamine biology, function and dysfunction.

**Current methods are limiting.** Catecholamines exist in biological samples at extremely low concentrations and are chemically unstable, prone to spontaneous oxidation and decompose easily at high pH. The quantification of catecholamines demands specific and very sensitive bioanalytical methods. The current standard method of choice is HPLC with electrochemical (EC) detection, despite time consuming sample preparation, long chromatographic runtime, and low sensitivity severely limiting its clinical use.

**Innovative testing for new research.** NMS Labs developed a test that will enable you to perform research that has never been viable before. The simple, fast and sensitive 2D-LC-MS/MS method measures three catecholamines (DA, NE and E) in plasma in routine clinical laboratory settings. The reliability of NMS Labs test can enable new research to occur—such as helping to detect and understand potential health issues and their progress or establishing a normal catecholamine level, especially in pediatrics.

**NIH HPLC STUDY: PLASMA vs. URINE**

| | SENSITIVITY | SPECIFICITY |
|---|---|---|
| Free Metanephrines in **Plasma** by HPLC | 99% | 82% |
| Fractionated Metanephrines in **Urine** by HPLC | 97% | 45% |

*Sensitivity and specificity is increased with the use of plasma compared to urine. Using metanephrines as a benchmark, an even higher sensitivity and specificity is anticipated for plasma catecholamines by 2D-LC-MS/MS. Future studies can help to document this.*

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- [x] State-of-the-art, patent pending technology
- [x] Smaller sample volume required
- [x] Reduced drug interferences

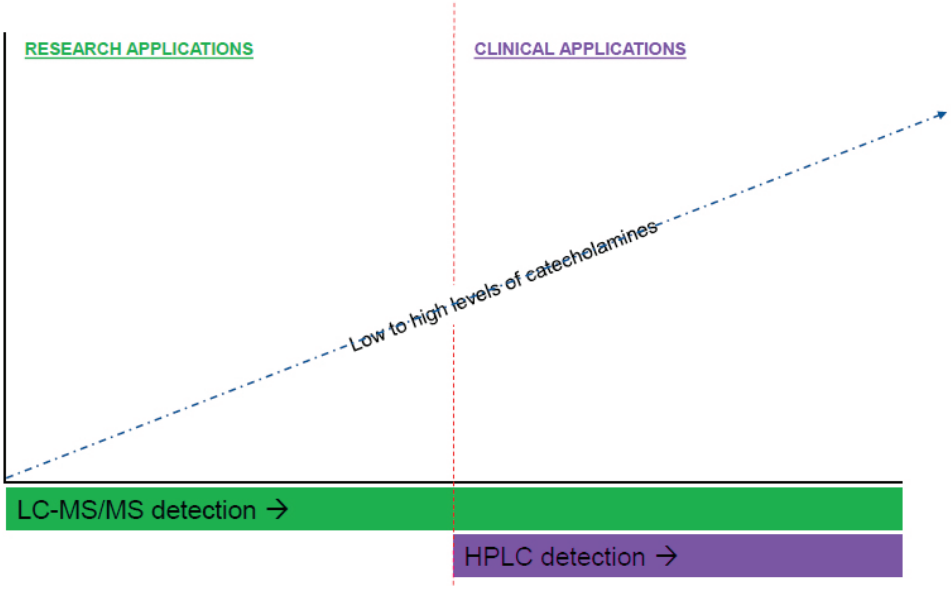
# BETTER RELIABILITY AND SENSITIVITY THROUGH TWO DIMENSIONAL TANDEM MASS SPECTROMETRY

## Questions to Ask

1) Do we know everything there is to know about catecholamines?
2) Do we know how the neurological and the hormonal aspects fit together?
3) Who is working on establishing a normal catecholamine level?

NMS Labs offers both 24-hour urine and plasma testing for corporate studies.

**We can assist in finding answers.** We are able to see catecholamines at very low levels because of our novel, reliable and sensitive methodology. Variation at the lower levels may play into differential diagnosis of many diseases. Since measurement at these low levels has not been seen before now, our test may enable a broad range of new research to occur.




| Test Details | |
|---|---|
| Acode | 7673SP |
| Test Name | Catecholamines, Fractionated and Free, Plasma |
| Scope | Dopamine, Epinephrine, Norepinephrine |
| Method | 2D-LC-MS/MS |
| Sample Volume | 200 µl plasma (0.4mL) |
| Sensitivity | 5pg/mL for all analytes |

## Popular Topics of Interest

- Catecholamine Receptors and Transporters
- Catecholamines and Cognition
- Catecholamines and Substance Abuse
- Catecholamines in Affective Behaviors
- Catecholamines in Neurological and Psychiatric Disease
- Catecholamines Regulation of Motivated Behavior
- Catecholamines Systems and Social Stress
- Circuit-Level Regulation & Effects of Catecholamine Function
- Dissecting Catecholamines Circuits
- Molecular Regulation of Catecholamines
- Synaptic Regulation and Effects of Catecholamine Transmission

When you need to be **ultimately confident in your endocrinology testing results,** turn to NMS Labs for excellence in laboratory services.

**1.866.522.2206** **nmslabs.com**

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