

Easy and  
efficient LSD  
screening.



revvity

NeoLSD™ MSMS kit

Designed for the screening of Pompe, MPS-I, Fabry, Gaucher, Niemann-Pick A/B and Krabbe disorders from a single DBS sample.



A pioneer in expanding newborn screening.

# Screen six lysosomal storage disorders from a single blood spot

Revvity, a new name and global leader in mass spectrometry newborn screening, continues to innovate and collaborate with science community professionals.

We proudly introduce the NeoLSD™ MSMS Kit, a groundbreaking mass spectrometry based IVD kit for newborn screening. It can screen for up to six lysosomal storage disorders from a single blood spot

punch. With the NeoLSD MSMS kit, you can perform up to 500 tests per day on one instrument. It also allows for easy switching between NeoBase2™ and NeoLSD™ kits on the same instrument. The kit offers a wide analytical range, reducing false positives and cost saving on repeat enzyme activity tests and unnecessary confirmatory testing.

- 👍 Pompe
- 👍 Niemann-PICK A/B
- 👍 Gaucher
- 👍 MPS-1
- 👍 Krabbe
- 👍 Fabry

## Benefits of the assay

**Screen for up to six LSDs from a single DBS punch and single incubation.**

You can screen for the most commonly occurred LSDs from a single DBS punch, saving time, human resources, and consumables.

**Wide dynamic range.**

MSMS provides you a wide dynamic range, enabling better separation of affected and non-affected individuals, potentially leading to less false positives, less costs and subsequent parent anxiety.

**High sample volume per day.**

With a run time of two minutes per sample, you can achieve a throughput that meets the demand of newborn screening.

# The kit includes all essential items for efficient newborn screening of LSD



## Kit includes:

Package P1		Package P2	Package P3
1/1 NeoLSD Kit Controls C1 C2 C3 (3 filter paper cassettes each containing 2 sets of dried blood spots)	2/2 NeoLSD Assay Buffer (1 Bottle, 35 mL)	NeoLSD Extraction Solution (1 bottle, 700 mL)	Microplate, U-bottomed (20 plates)
NeoLSD Substrates and Internal Standards (5 vials, dried)		Neo MSMS Flow Solvent (1 bottle, 800 mL)	Microplate, Deep Well (10 plates)
Barcode labels for the plate (30 pcs)			Adhesive aluminum foil microplate covers (20 sheets)
Lot-specific quality control certificate (1pc)			Adhesive microplate covers (10 sheets)

## Assay principle

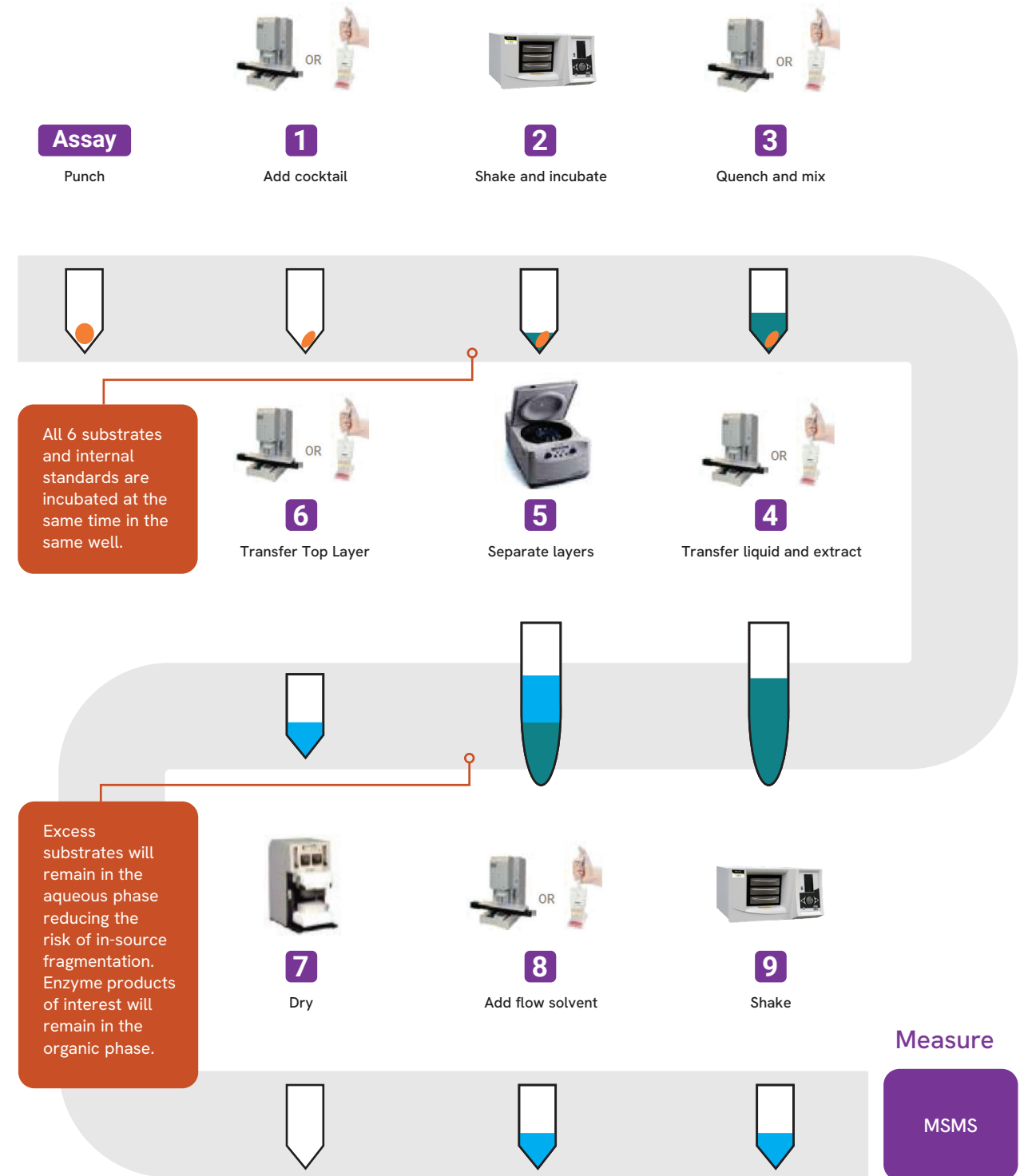
Enzyme activities are assessed by measuring the product generated when an enzyme reacts with a synthesized specific substrate to create a specific product as shown in the equation below:



In the NeoLSD Kit the internal standards and the enzyme-generated products are measured by Flow Injection Analysis – Tandem Mass Spectrometry (FIA-MSMS) using Multiple Reaction Monitoring (MRM). Enzymatic activities (Ae) are expressed as micromoles (μmol) per hour (h) per Liter (L) calculated from the peak ratio of each measured product and its associated internal standard and the known internal standard concentrations using the formula listed below:

$$Ae = \frac{[P/IS] * [IS] * V}{(3.1 * ti * RRF)}$$

# Easy assay workflow



# Efficient newborn screening

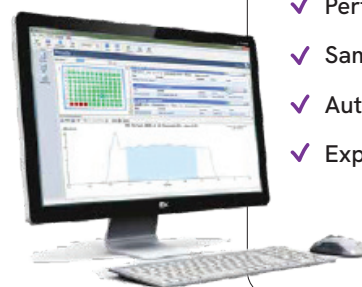
Enzyme	n	Enzyme activity (μmol/L/h)				
		Range	Mean	Median	Lower percentiles	
					0.5th	1.0th
ABG	1981	2.48-52.0	11.19	10.31	3.52	3.89
ASM	1981	1.30-35.1	7.12	6.63	2.66	2.95
GALC	1981	0.30-42.2	4.68	3.91	0.79	0.97
IDUA	1981	2.06-22.1	7.06	6.75	2.52	2.86
GLA	1981	3.31-85.1	11.83	10.16	4.08	4.19
GAA	1981	1.98-37.2	9.77	9.07	3.45	3.77

## Wide measuring range

Enzyme	Enzyme activity
	Measuring Range μmol/L/h
ABG	0.67-19.1
ASM	0.88-20.0
GALC	0.32-6.1
IDUA	0.47-18.8
GLA	0.92-20.3
GAA	0.63-26.2

## MSMS workstation software

For managing, reviewing and reporting results



### Key features:

- ✓ **Import data from instrument software**
  - Concentrations, IS intensities and TIC raw data
- ✓ **Automatically perform LSD specific calculations**
- ✓ **Visualize results**
  - Plate map with colored wells
  - Flagging of wells violating cutoffs or other QC criteria
  - View TIC & spectra
  - View results by disorder
  - Split grid view for easy review of results
- ✓ **SQL server database to store and consolidate data from one or more MSMS instruments**
- ✓ **Perform QC trend analysis and reporting**
- ✓ **Sample and assay audit tracking**
- ✓ **Automatic export to R4S for analysis**
- ✓ **Export results to LIMS**

Run up to 500 tests per day



# Expanded mass spectrometry solutions from Revvity, a worldwide community

From dried blood spot cards, punchers, instruments, reagents to informatics, Revvity's mass spectrometry solutions empower newborn screening laboratories across the globe to meet their demands.

The Revvity newborn screening community is a global movement that includes most newborn screening laboratories and leaders worldwide. By joining, you gain access to essential instruments, reagents, informatics, on-site installation and training, ongoing support, phone consultations, and various training courses.

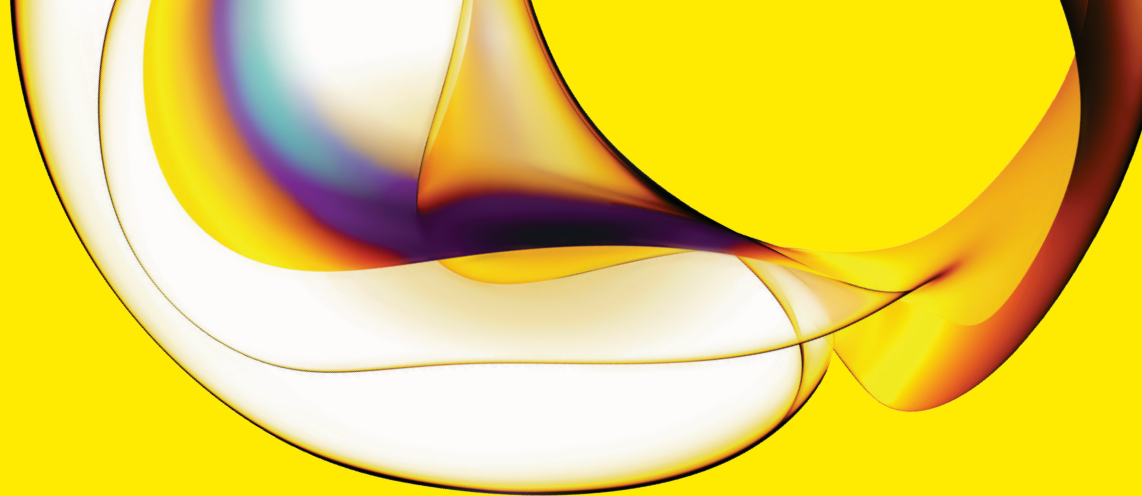
Our primary goal is to assist you in enhancing your newborn screening program

## Why screen for Lysosomal Storage Disorders?

LSDs comprise a heterogeneous group of nearly 50 disorders that are caused by genetic defects resulting in the dysfunction, deficiency or absence of a lysosomal enzyme. Although each disorder is rare, LSDs as a group have a frequency of 1 in 7,000-8,000 live births. Affected individuals are unable to metabolize the disease specific substrate of the deficient lysosomal enzyme, which leads to progressive accumulation of the substrate in the lysosomes of tissues. Mutations that result in an LSD are highly heterogeneous. Affected individuals exhibit a broad variety of disease severities

with widespread symptoms and ages of onset. Because symptoms are absent at birth, early diagnosis of these diseases by clinical observation can be difficult. Enzyme replacement therapy or hematopoietic stem cell transplantation are available to treat some LSDs, however, if an available therapy is delayed, irreversible tissue damage may result.

Infantile onset forms of some LSDs (Pompe and Krabbe disease) may be fatal within the first year of life when left untreated. Early diagnosis and treatment is essential to the wellbeing of individuals with these diseases.



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Please note that product labeling (such as kit insert, product label, and kit box) may be different compared to the company branding. Please contact your local representative for further details.

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