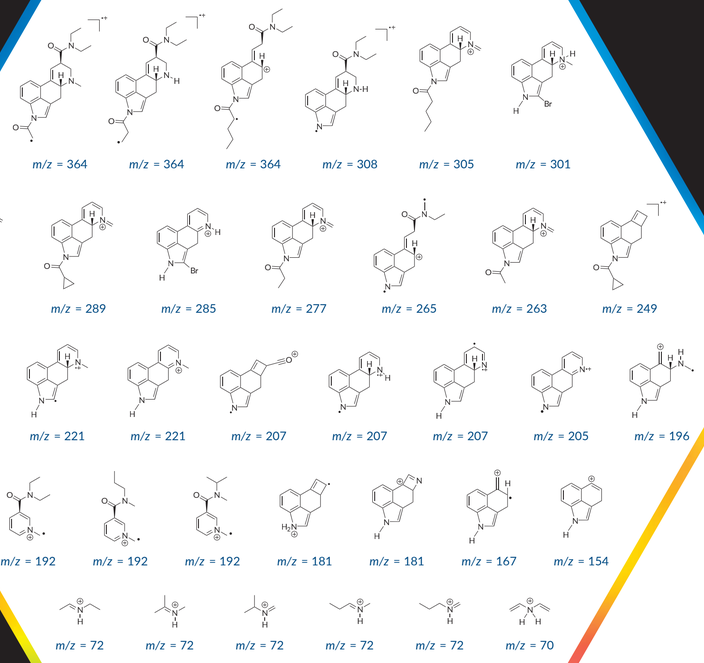
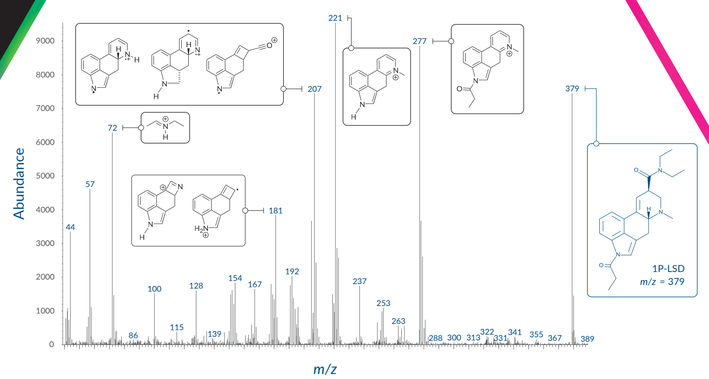
# Laboratory Guide for LYSERGAMIDE Identification and Naming

## Common Lysergamide MS Fragments




## Mass Spectrum of 1P-LSD and Tips for Interpretation



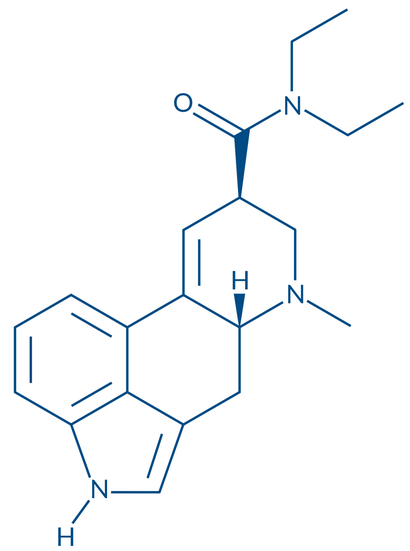

### Tips for EI-MS Interpretation:

- Lysergamides typically show the MW ion peak.
- A base peak of *m/z* = 221 correlates to analogues with an $N^6$ methyl group.
- Analogues with an acyl group at $N^1$ often show a second base peak with *m/z* = [221 + mass of acyl group] - 1. For example: 277 = [221 + 57] – 1.
- Observation of the *m/z* = 72 peak indicates that $N^{18}$ has one of the following as substituents:

a. **LSD** b. **MiPLA** c. **LAMPA**

View LSD Resources at caymanchem.com/LSD

- References used to compile poster
- Research tools for LSD & its structural derivatives
- Articles & more



## *LSD*

***Systematic Name:*** *Lysergic Acid Diethylamide*
***Synonyms:*** *LSD-25, LAD, LD, (+)-LSD, D-LSD*

***DEA Schedule:*** *Schedule I*
***Handling Notes:*** *Light sensitive*

Discover All Drug Identification Tools & Resources at www.caymanchem.com/forensics



## Common Substitutions

Lysergamides are classified as tetracyclic ergoline molecules where variations typically occur at three main regions within the tetracyclic scaffold (see below). For LSD, R = H, $R^1$ = $CH_3$, and $R^2$ and $R^3$ = $CH_2CH_3$. LSD analogs have a variety of R, $R^1$, $R^2$, and $R^3$ groups. Here are some common lysergamides and how their names are derived.

### 1. Amide $N^{18}$ Substitutions:

**MiPLA**
(**M**ethyl **I**so**p**ropyl **L**ysergic Acid **A**mide)

**LAMPA**
(**L**ysergic **A**cid **M**ethyl **P**ropyl **A**mide)

**LSM-775**
(**Ly**sergic Acid **M**orpholide)

**LSZ**
(**Ly**sergic Acid A**z**etidide)

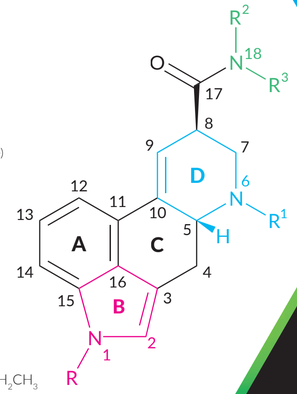
**LSA/LAA** or **LA**
(**Ly**sergic **A**cid **A**mide)

### 2. Ring (D) Substitutions at $N^6$ position:

- **AL-LAD** (**Al**lyl **L**ysergic **A**cid **D**iethylamide): $R^1$ = $H_2CCH=CH_2$
- **ETH-LAD** (**Eth**yl-**LAD**): $R^1$ = $CH_2CH_3$
- **PRO-LAD** (**Pro**pyl-**LAD**): $R^1$ = $CH_2CH_2CH_3$

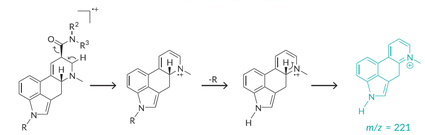
### 3. Ring (B) Substitutions:

- **ALD-52** (**A**cetyl **L**ysergic Acid **D**iethylamide): R = $COCH_3$
- **1P-LSD** (**1**-**P**ropionyl **L**ysergic Acid **D**iethylamide): R = $COCH_2CH_3$
- **1B-LSD** (**1**-**B**utanoyl **LSD**): R = $CO(CH_2)_2CH_3$
- **1V-LSD** (**1**-**V**aleroyl **LSD**): R = $CO(CH_2)_3CH_3$
- **1cP-LSD** (**1**-**c**yclo**p**ropanecarbonyl **LSD**): R = $COC_3H_5$
- **2-bromo LSD**: R = H, Br is at the $C^2$ position

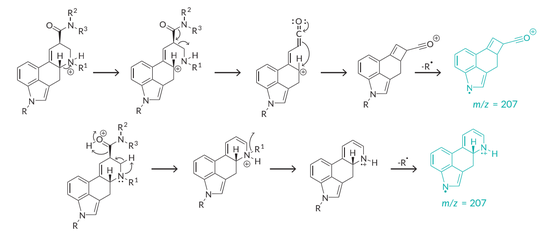



## *Proposed Mechanism for Some Common Fragments*

### FRAGMENTATION PATHWAY
FOR BASE PEAK 221




### MULTIPLE FRAGMENTATION PATHWAYS
LEADING TO SECONDARY BASE PEAK 207




### FRAGMENTATION PATHWAYS
LEADING TO OTHER COMMON FRAGMENTS