

Ludovico, Inc.

111 W 7th Street PH 12
Los Angeles, CA 90014

Carbonyl Assay
Samples Received 6/22/15

Product Name
Carnivale

Analysis Report
(0615-545)

GC/MS Analysis For
Diacetyl
2,3-Pentanedione (aka: Acetyl propionyl)



Enthalpy Analytical, Inc.

Phone: (919) 850 - 4392 / Fax: (919) 850 - 9012 / www.enthalpy.com
800-1 Capitola Drive Durham, NC 27713-4385



Company:	Ludovico, Inc.
Sample Condition:	Samples received in good condition.
Notes:	Chain of custody verified.

Method / Parameter	Analyte(s)
GC/MS Analysis	Diacetyl
	2,3-Pentanedione (aka: Acetyl propionyl)

Summary of Method:

A measured volume of sample is combined with a volume of acetonitrile. A known amount of internal standard (Butanedione-d6) is added and the vial is capped and mixed thoroughly to combine. An aliquot is then analyzed quantitatively against a linear calibration curve using a GC/MS equipped with a mass selective detector. In this analysis, the limit of detection is 1.14 ug/mL for 'Diacetyl' and 1.17 ug/mL for '2,3-Pentanedione'.

Company	Ludovico, Inc.	# Samples	1
Analyst	JM	Sample(s) Received	6/22/15
Parameters	GC/MS Analysis	Client Project:	0001
Job #	0615-545		

Enthalpy Code	Sample Name	Notes	Diacetyl (ug/mL)	2,3-Pentanedione (ug/mL)
0615-545-02	Carnivale	SO181715-020-0331	Not Detected	Not Detected

QC Notes:

'Diacetyl' and '2,3-Pentanedione' were not detected above the minimum detection limit.

I certify that to the best of my knowledge all analytical data presented in this report:

- Have been checked for completeness
- Are accurate, error-free, and legible
- Have been conducted in accordance with approved protocol, and that all deviations and analytical problems are summarized.

This analytical report was prepared in Portable Document Format (.PDF) and contains 2 pages.

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