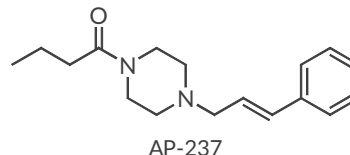


Standardized Naming System for Cinnamylpiperazines



Cayman's scientists have established a standardized naming convention for cinnamylpiperazines (a.k.a. acyl cinnamylpiperazines). This convention is based on AP-237, as its structure represents the prototypical backbone of cinnamylpiperazines.



ACCREDITED
ISO/IEC 17025 #AT-1773
ISO 17034 #AR-1774

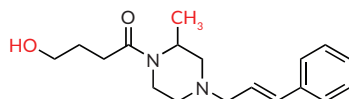
AP-237 is a synthetic opioid that was developed for pain management in the 1970s. A methylated form of AP-237 (2-methyl AP-237) appeared on the recreational drug market in 2019. The emergence of this novel psychoactive substance prompted the development of a standardized cinnamylpiperazine naming system.

This convention is easy to use and can be adapted to future analogs and their metabolites. This system differentiates the varying points of substitution in cinnamylpiperazines by region in the following manner:

Acyl Group

Substituents added to the alkyl chain of the acyl group are named using α' , β' , and/or γ' .

for example:



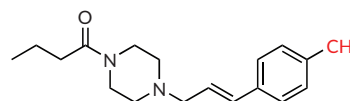
γ' -hydroxy 2-methyl AP-237

contains a hydroxy group at the γ' -position of the alkyl chain. Note that it also has a methyl group at the 2-position of the piperazine ring

N-Alkyl Chain

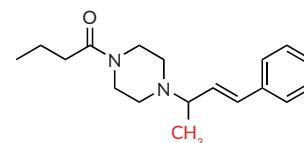
Substituents on the aryl ring portion of the N-alkyl chain occur at the *ortho*, *meta*, and/or *para* position. Substituents on the linker between the piperazine ring and the phenyl ring are designated by α , β , and/or γ .

for example:



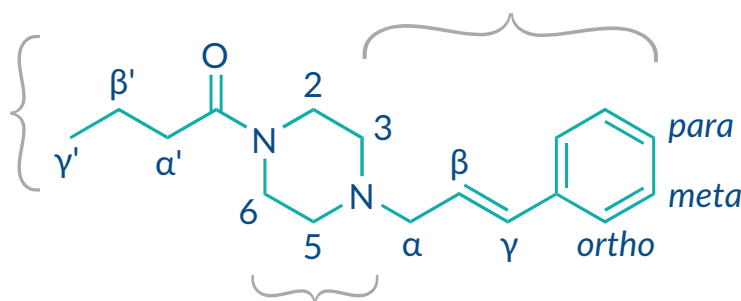
para-methyl AP-237

contains a methyl group at the *para* position of the aryl ring

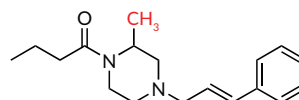


α -methyl AP-237

contains a methyl group at the α -position of the linker region



for example:



2-methyl AP-237

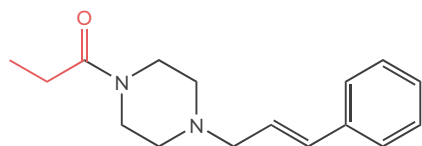
contains a methyl group at the 2-position of the piperazine ring

Piperazine Ring

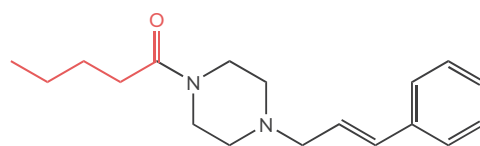
Substituents on the piperazine ring are named based on carbon position (2, 3, 5, and/or 6).

Acyl Group Swaps

Cinnamylpiperazines with acyl group swaps are named by placing the name of the moiety that is replacing the typical AP-237 butyryl moiety in front of the word "AP-237".



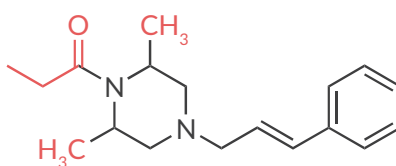
Propionyl AP-237



Valeryl AP-237

Emergent Analogs

The cinnamylpiperazine AP-238 emerged on the recreational drug market in 2020 sold under this name. Using Cayman's naming convention, an alternative name for AP-238 that makes its structure more evident is "2,6-dimethyl Propionyl AP-237".



"AP-238"

2,6-dimethyl Propionyl AP-237

To cite this naming system: Iula, D.M. Standardized Naming System for Cinnamylpiperazines. *Article, Cayman Chemical* (2021).

Available Analytical Standards

Item No.	Product Name
26484	AP-237 (hydrochloride)
26485	2-methyl AP-237 (hydrochloride)
31647	2-methyl AP-237-d ₇ (hydrochloride)
34456	<i>para</i> -hydroxy 2-methyl AP-237 (hydrochloride)
30744	<i>para</i> -methyl AP-237 (hydrochloride)
31128	AP-238 (hydrochloride)

We strive to assist the forensic community by providing standardized naming systems for psychoactive substances that avoid ambiguity.

Read more about the standardized naming of cinnamylpiperazines and other psychoactive substances at www.caymanchem.com/npsconventions