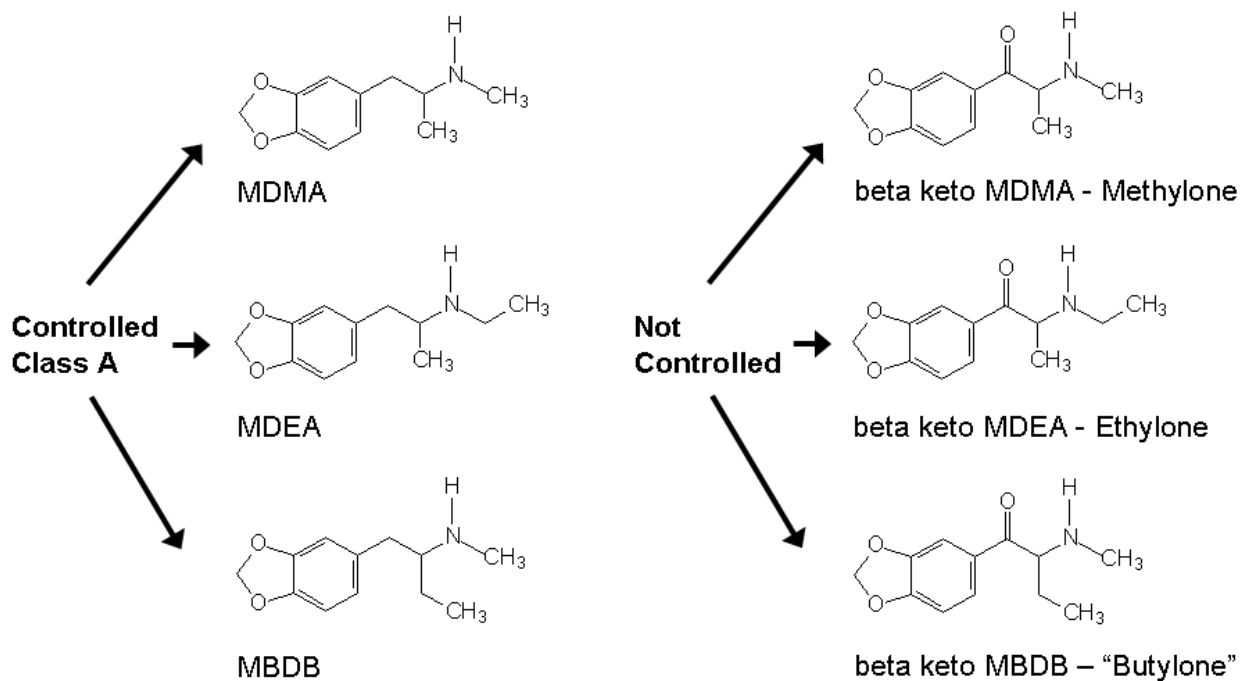


**Analytical profiles of the beta keto amphetamines**  
**(bkMDMA, bkMDEA, and bkMBDB)**

**The compounds**

A	2-methylamino-1-(3,4-methylenedioxyphenyl)propan-1-one C <sub>11</sub> H <sub>13</sub> NO <sub>3</sub> fw 207.2	bkMDMA	'Methylone'
B	2-ethylamino-1-(3,4-methylenedioxyphenyl)propan-1-one C <sub>12</sub> H <sub>15</sub> NO <sub>3</sub> fw 221.3	bkMDEA	'Ethylone'
C	2-methylamino-1-(3,4-methylenedioxyphenyl)butan-1-one C <sub>12</sub> H <sub>15</sub> NO <sub>3</sub> fw 221.3	bkMBDB	'Butylone'



*Butylone is also alleged to be trademarked name for pentobarbitone*

**Methylone** is a beta-keto analogue of MDMA (Ecstasy). It is also known as bk-MDMA, M1, or MDMCat. Methylone is more properly known as 3,4-methylenedioxymethcathinone and is related to methcathinone as MDMA is related to methamphetamine and MDA is to amphetamine.

In spite of some substantial pharmacokinetic differences (its dopaminergic activity is far more pronounced relative to its serotonergic activity), methylone is an empathogen-like drug and a mild stimulant, producing effects similar to, yet less intense than MDMA.

Methylone in powder formulation has recently (2008) been found in an amnesty bin from a UK dance venue.

**Ethylone** is the cathinone analogue of MDEA. It is reported to be less potent than methylone and has only a short history of human use.

**bk-MBDB** is also known as "butylone": however Butylone is a trademarked name for pentobarbitone. Bk-MBDB shares the same relationship to MBDB as methylone does to MDMA. The dosage range is not fully understood but seems to be lower than for MBDB. No formal research has been published on this substance, and nothing is known of its pharmacological profile or toxicology, although anecdotal reports indicate it is subjectively similar to but milder than methylone.

Bk-MBDB has been found in tablets sold by UK based legal-high internet sites supplied by 'London Underground'.



“Legal high” tablets such as those shown above are known to be inconsistent in their contents. It is possible that the same tablets bought at different times from the same site may differ in their contents.

## GC/MS

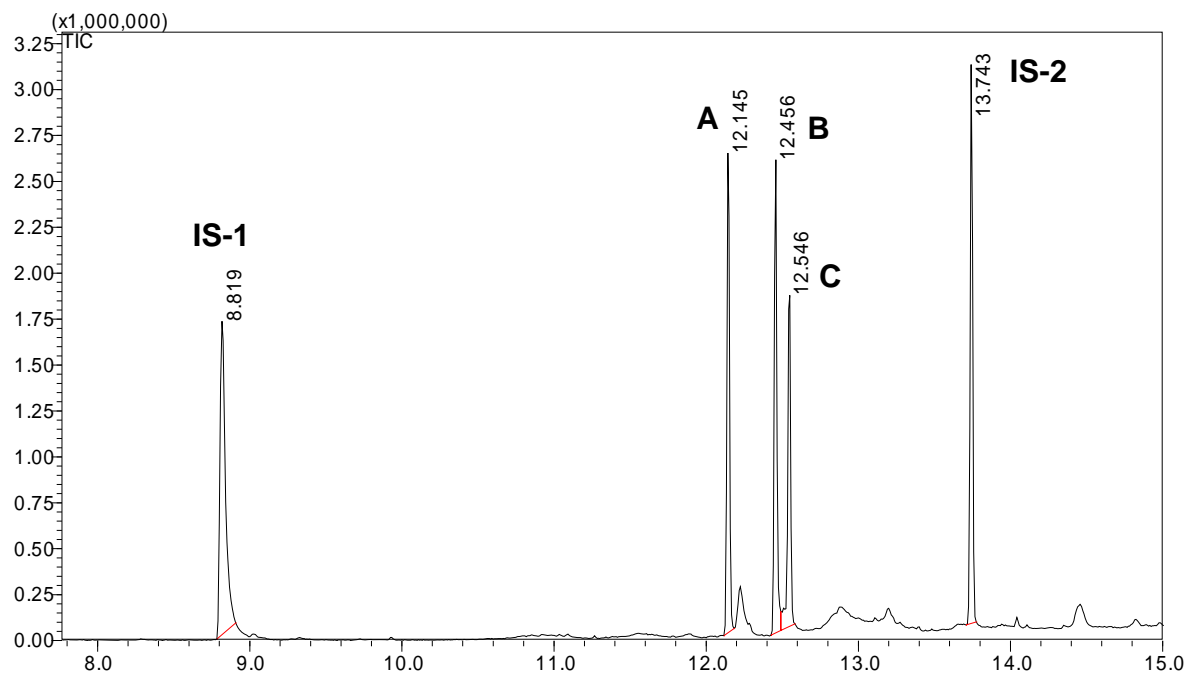
Samples were analysed on a Shimadzu QP2010 gas chromatograph mass spectrometer with an HP5MS column (30m x 0.25mm, 0.50µm).

Column oven temperature	80°C
Injection temperature	225°C
Injection mode	Splitless
Carrier gas	Helium
Flow rate	1.0 ml/min
Pressure	9.5 psi
Ion source temperature	200°C
Interface temperature	250°C

Column oven temperature programme:

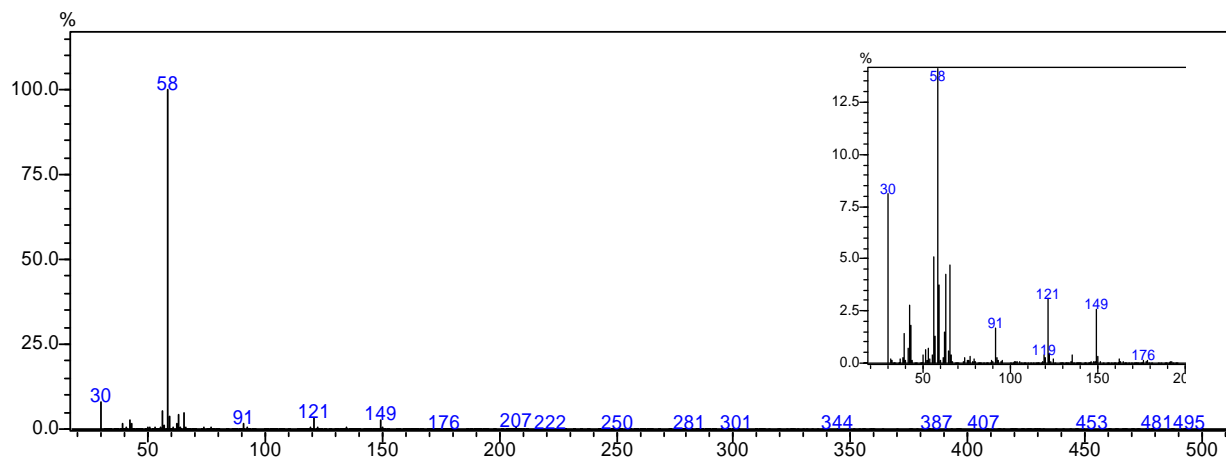
Rate	Final temperature	Hold time
-	80°C	4 minutes
40.00°C/min	280°C	8 minutes
40.00°C/min	290°C	11.5 minutes

## Chromatogram:-

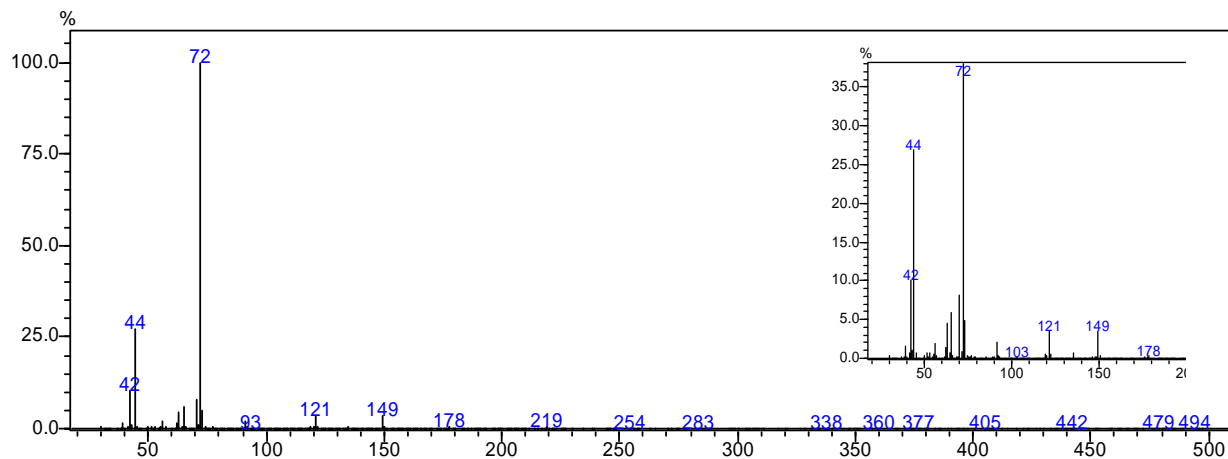


ID	Compound Name	Abbreviations	Retention time (mins.)
IS-1	Quinoline	IS-1	8.819
A	2-methylamino-1-(3,4-methylenedioxyphenyl)propan-1-one 'Methylone'	bkMDMA	12.145
B	2-ethylamino-1-(3,4-methylenedioxyphenyl)propan-1-one 'Ethylone'	bkMDEA	12.456
C	2-methylamino-1-(3,4-methylenedioxyphenyl)butan-1-one 'Butylone'	bkMBDB	12.546
IS-2	Pyribenzamine (tripelenamine)	IS-2	13.743

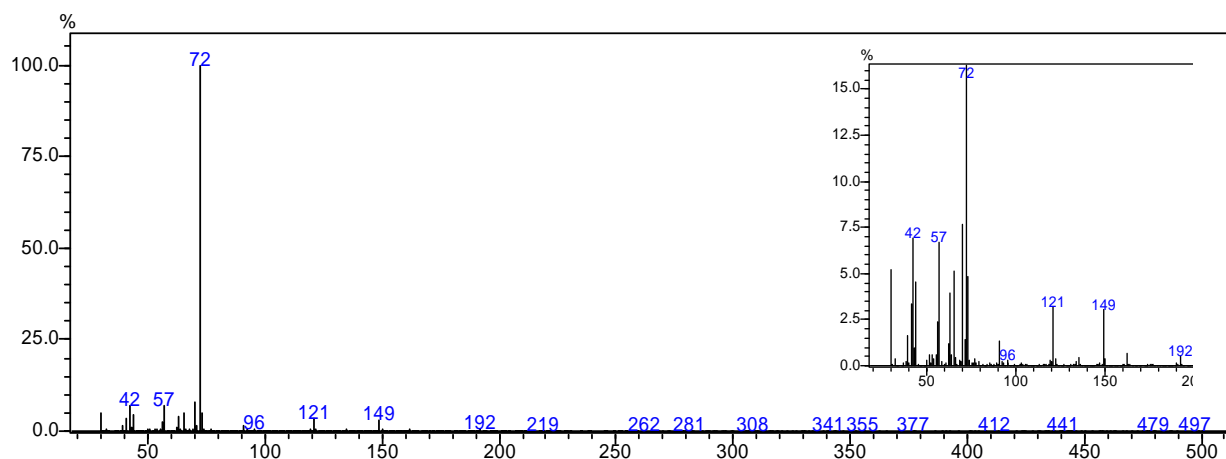
**(A) 2-methylamino-1-(3,4-methylenedioxyphenyl)propan-1-one**  
**'Methylone' (bkMDMA) 12.145 mins**



**(B) 2-ethylamino-1-(3,4-methylenedioxyphenyl)propan-1-one**  
**'Ethylone' (bkMDEA) 12.456 mins**



**(C) 2-methylamino-1-(3,4-methylenedioxyphenyl)butan-1-one**  
**'Butylone' (bkMBDB) 12.546 mins**



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7th August 2008