

Imperial College  
London

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14 OCT 2015

Signature

## TOXICOLOGY REPORT

IMPERIAL COLLEGE LONDON, ST DUNSTAN'S RD, LONDON, W6 8RP.  
Telephone: 020 8846 7108 Fax: 020 8846 7110

<b>Name:</b>	<b>TAYLOR, Jack</b>	<b>TOX No:</b>	1772/15
<b>Ref No:</b>	HMC 01973-2015 PM414/15	<b>PM Date:</b>	17/09/2015
<b>Mortuary:</b>	Queens Hospital	<b>Receipt Date:</b>	24/09/2015
<b>Pathologist:</b>	Dr. G. Soosay	<b>Report Date:</b>	12/10/2015

### Ethanol

**Blood:** 96 mg/100ml

**Urine:** 140 mg/100ml

Blood ethanol: legal limit for driving 80 mg/100ml  
100 - 200 mg/100ml - associated with drunkenness  
200 - 300 mg/100ml - coma may occur  
Greater than 400 mg/100ml - associated with death

### Gamma-hydroxybutyrate (GHB)

**Blood:** 203 ug/ml

**Urine:** Positive

In ante-mortem blood, endogenous GHB concentrations are usually below 5 ug/ml. In post-mortem blood, endogenous GHB concentrations are usually below 30 ug/ml. However, highly putrefied blood may give rise to higher endogenous GHB concentrations.

The presence of GHB at higher concentrations may indicate ingestion of GHB (or related compounds gamma-butyrolactone (GBL) or 1,4-butanediol).

Non-fatal overdoses of GHB have been reported with blood concentrations up to 551 ug/ml.

In seven deaths attributed to GHB abuse, post-mortem blood concentrations ranged from 27 to 1030 ug/ml. A post-mortem blood GHB concentration of 538 ug/ml was detected in a man who committed suicide by ingesting GBL.

GHB is an anaesthetic and hypnotic drug. It is used as a drug of abuse for its euphoric effects. However it can also cause drowsiness and unconsciousness.

### Methylamphetamine

**Stomach Contents:** Positive

**Blood:** 0.80 ug/ml

**Urine:** Positive

Plasma concentrations associated with recreational use: 0.01 to 0.05 ug/ml  
Potentially fatal blood concentration: greater than 10.0 ug/ml

### Compound structurally similar to mephedrone

**Blood:** Trace amount

This compound is a new psychoactive substance (NPS), possibly 4-chloromethcathinone (clephedrone), which is structurally similar to mephedrone. As there is no reference standard available for confirmation, identification was achieved by matching the spectral data obtained to a published paper. There is no information available regarding the toxicity of this compound.

### Propranolol

**Stomach Contents:** Positive

**Blood:** Not Detected (Limit of detection 0.10 ug/ml)

**Urine:** Positive

Therapeutic plasma concentration: 0.05 to 0.3 ug/ml  
Potentially toxic concentration: greater than 1.0 ug/ml  
Potentially fatal blood concentration: greater than 4.0 ug/ml

Propranolol is a beta-adrenoceptor blocking drug used in the treatment of hypertension, angina and arrhythmias. It has a relatively low volume of distribution, so increases in concentration after death due to post-mortem redistribution will be low.

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### Morphine (free)

**Blood:** Not detected (Limit of detection 0.01 ug/ml)

Therapeutic plasma concentration : 0.04 to 0.50 ug/ml

Potentially fatal blood concentration : greater than 0.15 ug/ml

As morphine induces tolerance, there is great variation in both therapeutic and fatal concentrations. Fatalities can occur at a lower concentration if alcohol and/or benzodiazepines are also present.

**NO OTHER DRUGS DETECTED IN GENERAL SCREEN OF STOMACH CONTENTS OR BLOOD**

**NO OTHER DRUGS OF ABUSE DETECTED IN URINE**

(PTO for common drugs detected)

### CLEAR FLUID

Analysis of the clear fluid showed the presence of gamma-hydroxybutyrate (GHB). GHB is usually presented as a powder while gamma-butyrolactone (GBL) is presented as a liquid. However, when ingested, GBL is rapidly converted to GHB. Similarly, during analysis, GBL is converted to GHB.

### POWDER

Analysis of the powder showed the presence of a compound structurally similar to mephedrone, possibly 4-chloromethcathinone (clephedrone), a new psychoactive substance (NPS). As there is no reference standard available for confirmation, identification was achieved by matching the spectral data obtained to a published paper. There is no information available regarding the toxicity of this compound.

Signature

Signed

Dr Rebecca Andrews PhD  
Senior Toxicologist

Samples submitted from this case will be destroyed 4 months after date of receipt unless notified otherwise in writing