



# Clinical and Medical Laboratory Testing

## Catalogue

**December 2023**

*Quality reference materials for identification and calibration are essential to making accurate chemical measurements in clinical testing.*

| **Category** | **Description** | **NMI reference** | **Unit of issue (mg)** | Domestic Cost (A$) (excl GST) | InternationalCost (A$) |
| --- | --- | --- | --- | --- | --- |
| Testosterone and metabolites | Testosterone | M914c | 10 | 121 | 169 |
| Testosterone and metabolites | Testosterone glucuronic acid | D507d | 1 (ampoule) | 155 | 218 |
| Testosterone and metabolites | Testosterone sulfate (Et3N salt) | D508 | 1 (ampoule) | 121 | 169 |
| Testosterone and metabolites | Epitestosterone | D547b | 1 (ampoule) | 121 | 169 |
| Testosterone and metabolites | Epitestosterone glucuronide (Na salt) | S035 | 1  | 121 | 169 |
| Testosterone and metabolites | Epitestosterone sulfate | D605 | 1 | 121 | 169 |
| Testosterone and metabolites | 5α-Dihydrotestosterone | D680 | 10 | 121 | 169 |
| Testosterone and metabolites | 5α-Dihydrotestosterone glucuronide free acid | S006 | 1 | 155 | 218 |
| Testosterone and metabolites | 5α-Dihydrotestosterone sulfate | D609 | 1 | 121 | 169 |
| Testosterone and metabolites | Androsterone | D550d | 1 | 121 | 169 |
| Testosterone and metabolites | Androsterone glucuronide | D572b | 1 | 155 | 218 |
| Testosterone and metabolites | Androsterone sulfate (Na+ salt) | D610b | 1 | 121 | 169 |
| Testosterone and metabolites | Etiocholanolone | D551c | 1 (ampoule) | 121 | 169 |
| Testosterone and metabolites | Etiocholanolone glucuronide (Na+ salt) | D607 | 1 | 155 | 218 |
| Testosterone and metabolites | Etiocholanolone glucuronide (Na+ salt)  | D607b | 1 | 110 | 154 |
| Testosterone and metabolites | Etiocholanolone sulfate | D608 | 1 (ampoule) | 121 | 169 |
| Testosterone and metabolites | 5α-Androstane-3α,17β-diol  | D634b | 1 | 121 | 169 |
| Testosterone and metabolites | 5α-Androstane-3α,17β-diol-17--glucuronic acid | S002 | 1 | 121 | 169 |
| Testosterone and metabolites | 5α-Androstane-3α,17β-diol-3--glucuronic acid  | S004 | Exhausted |  |  |
| Testosterone and metabolites | 5α-Androstane-3β,17β-diol  | D635 | 1 | 155 | 218 |
| Testosterone and metabolites | 5β-Androstane-3α,17β-diol | D636 | 1 | 121 | 169 |
| Testosterone and metabolites | 5-Androstane-3α,17β-diol-17--glucuronic acid | S005 | Exhausted |  |  |
| Testosterone and metabolites | 5-Androstane-3α,17β-diol-3--glucuronic acid | S003c | 1 | 188 | 264 |
| Testosterone and metabolites | 5β-Androstane-3β,17-diol | D637 | 1 | 155 | 218 |
| Deuterated internal standards of testosterone and metabolites | 16,16,17-d3-Testosterone | D546 | 1 (ampoule) | 155 | 218 |
| Deuterated internal standards of testosterone and metabolites | 16,16,17-d3-Testosterone glucuronide (sodium salt) | S036 | 1 (ampoule) | 121 | 169 |
| Deuterated internal standards of testosterone and metabolites | 16,16,17-d3-Testosterone sulfate (Et3N salt) | D506b | 1 (ampoule) | 155 | 218 |
| Deuterated internal standards of testosterone and metabolites | 19-d3-Testosterone | D644 | Exhausted | 228 | 319 |
| Deuterated internal standards of testosterone and metabolites | d3-Epitestosterone | D548 | 1 (ampoule) | 155 | 218 |
| Deuterated internal standards of testosterone and metabolites | d4-Epitestosterone | S001 | 1 (ampoule) | 155 | 218 |
| Deuterated internal standards of testosterone and metabolites | d3-Epitestosterone glucuronide | D604 | Exhausted | 208 | 319 |
| Deuterated internal standards of testosterone and metabolites | d3-Epitestosterone sulfate | D591 | 1 | 155 | 218 |
| Deuterated internal standards of testosterone and metabolites | d3-5α-Dihydrotestosterone | D552 | 1 | 155 | 218 |
| Deuterated internal standards of testosterone and metabolites | d3-5α-Dihydrotestosterone glucuronide free acid | D573b | 1 | 155 | 218 |
| Deuterated internal standards of testosterone and metabolites | d3-5α-Dihydrotestosterone sulfate | D590 | 1 | 155 | 218 |
| Deuterated internal standards of testosterone and metabolites | d4-Androsterone | D549 | 1 | 155 | 218 |
| Deuterated internal standards of testosterone and metabolites | d4-Androsterone glucuronic acid  | D829g | 1 (ampoule) | 155 | 218 |
| Deuterated internal standards of testosterone and metabolites | d4-Androsterone sulfate  | D587 | 1 | 155 | 218 |
| Deuterated internal standards of testosterone and metabolites | d5-Etiocholanolone  | D528d | 1 (ampoule) | 121 | 169 |
| Deuterated internal standards of testosterone and metabolites | d5-Etiocholanolone sulfate  | D606 | 1 | 155 | 218 |
| Deuterated internal standards of testosterone and metabolites | d3-5α-Androstane-3α,17β-diol  | D593 | 1 | 155 | 218 |
| Deuterated internal standards of testosterone and metabolites | d3-5α-Androstane-3β,17β-diol  | D594 | 1 | 155 | 218 |
| Deuterated internal standards of testosterone and metabolites | d5-5β-Androstane-3α,17β-diol  | D580 | 1 | 155 | 218 |
| Deuterated internal standards of testosterone and metabolites | d5-5β-Androstane-3β,17-diol  | S014 | 1 | 121 | 169 |
| Deuterated internal standards of testosterone and metabolites | 5α-Androstane-3β,17β-diol-3--glucuronic acid  | D678b | 1 | 155 | 218 |
| Deuterated internal standards of testosterone and metabolites | 5α-Androstane-3β-ol-17-one-3-glucuronide Na+ salt | S031 | 1 | 121 | 169 |
| Deuterated internal standards of testosterone and metabolites | 17-Hydroxyprogesterone | S041 | 20 | 121 | 169 |
| Nandrolone and metabolites | Nandrolone  | S038 | 10  | 121 | 169 |
| Nandrolone and metabolites | 17β-Nandrolone glucuronide (K+ salt) | D861 | 1 | 228 | 319 |
| Nandrolone and metabolites | 17β-Nandrolone sulfate (Na+ salt) | D809b | 1 | 121 | 169 |
| Nandrolone and metabolites | 17α-Nandrolone (epi-nandrolone)  | D722e | 1 (ampoule) | 121 | 169 |
| Nandrolone and metabolites | 17α-Nandrolone sulfate | D783b | 5 | 121 | 169 |
| Nandrolone and metabolites | 19-Norandrosterone | D555a | 1 (ampoule) | 121 | 169 |
| Nandrolone and metabolites | 19-Norandrosterone glucuronide (Na+ salt)  | D596a | 1 (ampoule) | 155 | 218 |
| Nandrolone and metabolites | 19-Norandrosterone sulfate (Et3N salt) | D841b | 1 (ampoule) | 121 | 169 |
| Nandrolone and metabolites | 19-Noretiocholanolone | D554 | 1 (ampoule) | 121 | 169 |
| Nandrolone and metabolites | 19-Noretiocholanolone glucuronide (Na salt) | D595a | 1 (ampoule) | 155 | 218 |
| Nandrolone and metabolites | 5(10)-Estrene-3,17-diol | D926 | Exhausted |  |  |
| Deuterated internal standards of nandrolone and metabolites  | d3-17β-Nandrolone  | D583 | 5 | 228 | 319 |
| Deuterated internal standards of nandrolone and metabolites  | d3-17β-Nandrolone sulfate (Et3N salt) | D782b | 1 (ampoule) | 155 | 218 |
| Deuterated internal standards of nandrolone and metabolites  | 13C2-17β-Nandrolone | D679 | 5 | 188 | 264 |
| Deuterated internal standards of nandrolone and metabolites  | d4-19-Norandrosterone | D584c | 1 (ampoule) | 155 | 218 |
| Deuterated internal standards of nandrolone and metabolites  | d4-19-Norandrosterone glucuronide (Na+ salt)\* | D898b | 1 | 121 | 169 |
| Deuterated internal standards of nandrolone and metabolites  | d4-19-Noretiocholanolone | D742 | 1 (ampoule) | 155 | 218 |
| Amphetamines  | (±)-Amphetamine hydrochloride  | D736c | 50 | 155 | 218 |
| Amphetamines  | (±)-Amphetamine sulfate | D420d  | 50 | 121 | 169 |
| Amphetamines  | d-(+)-Amphetamine sulfate  | D961 | 50 | 155 | 218 |
| Amphetamines  | (±)-4-Methylamphetamine hydrochloride | D895b | 10 | 188 | 264 |
| Amphetamines  | (±)-4-Methylmethamphetamine hydrochloride  | D963 | 20 | 188 | 264 |
| Amphetamines  | (±)-Methamphetamine hydrochloride | D816g | 50 | 155 | 218 |
| Amphetamines  | S-(+)-Methamphetamine hydrochloride | D830b | 50 | 121 | 169 |
| Amphetamines  | (±)-3,4-Methylenedioxyamphetamine hydrochloride (MDA) | D842c | 50 | 121 | 169 |
| Amphetamines  | (±)-N-Methyl-3,4-methylenedioxyamphetamine hydrochloride (MDMA) | D792f | 50 | 155 | 218 |
| Cocaine and related compounds | Benzoylecgonine tetrahydrate | D745c | 50 | 155 | 218 |
| Cocaine and related compounds | Cocaine base  | D826d | 50 | 155 | 218 |
| Cocaine and related compounds | Cocaine hydrochloride  | D747c | 20 | 155 | 218 |
| Cocaine and related compounds | Ecgonine hydrochloride | D746b | 50 | 155 | 218 |
| Cocaine and related compounds | Anhydroecgonine methyl ester | D847 | Exhausted |  |  |
| Cocaine and related compounds | Methyl ecgonine hydrochloride, monohydrate | D452c | 10 | 188 | 264 |
| Ephedrine and related compounds | (+)-Ephedrine hemihydrate  | M723 | 100 | 155 | 218 |
| Ephedrine and related compounds | (-)-Ephedrine hydrochloride  | M924 | 100 | 155 | 218 |
| Ephedrine and related compounds | (-)-Ephedrine hydrochloride | M924b | 50 | 155 | 218 |
| Ephedrine and related compounds | dl-Norephedrine hydrochloride (Phenylpropanolamine)  | M296 | 100 | 121 | 169 |
| Ephedrine and related compounds | (+)-Norpseudoephedrine hydrochloride (Cathine)  | M297 | 50 | 121 | 169 |
| Ephedrine and related compounds | p-Hydroxyephedrine hydrochloride (Oxilifrine hydrochloride) | D892b | 5 | 121 | 169 |
| Ephedrine and related compounds | (-)-Methylephedrine hydrochloride | M243b | 20 | 121 | 169 |
| Ephedrine and related compounds | dl-Norephedrine hydrochloride (Phenylpropanolamine) | M296 | 100 | 121 | 169 |
| Ephedrine and related compounds | (+)-Norpseudoephedrine hydrochloride (Cathine)  | M297 | 50 | 121 | 169 |
| Ephedrine and related compounds | (-)-Pseudoephedrine base  | D397 | 100 | 155 | 218 |
| Ephedrine and related compounds | (+)-Pseudoephedrine hydrochloride  | D775b | 50 | 121 | 169 |
| Opiates | Acetylcodeine base | D821c | 50 | 188 | 264 |
| Opiates | Buprenorphine base | D932 | 10 | 121 | 169 |
| Opiates | Codeine base | D671b | 50 | 155 | 218 |
| Opiates | d3-Codeine base | D673 | 1 | 155 | 218 |
| Opiates | Codeine glucuronide | D694 | 0.1 | 155 | 218 |
| Opiates | d3-Codeine glucuronide | D695 |  0.1 (ampoule) | 228 | 319 |
| Opiates | Dihydrocodeine hydrogen tartrate | D823 | 50 | 155 | 218 |
| Opiates | Heroin base | D752d | 50 | 121 | 169 |
| Opiates | Hydrocodone | D988 | 20 | 121 | 169 |
| Opiates | Hydromorphone hydrochloride | D785b | 20 | 121 | 169 |
| Opiates | Methyl codeine | D924 | 10 | 121 | 169 |
| Opiates | 3-Monoacetylmorphine sulfamate | D766c | 20 | 155 | 218 |
| Opiates | 6-Monoacetylmorphine base | D777c | 20 | 121 | 169 |
| Opiates | Morphine base monohydrate | D408e | 50 | 155 | 218 |
| Opiates | d3-Morphine base monohydrate | D709 | 1 | 155 | 218 |
| Opiates | Morphine sulfate | D925 | 50 | 155 | 218 |
| Opiates | Noscapine (Narcotine) base | D831b | 50 | 155 | 218 |
| Opiates | Noscapine (Narcotine) hydrochloride | D791b | 50 | 121 | 169 |
| Opiates | Oxycodone | D987 | 20 | 155 | 218 |
| Opiates | Oxymorphone | D1038 | 10 | 155 | 218 |
| Opiates | Papaverine hydrochloride | D750b | 50 | 121 | 169 |
| Opiates | Pholcodine | D539b | 20 | 155 | 218 |
| Opiates | Thebaine base | D731b | 20 | 121 | 169 |
| Miscellaneous | Caffeine | M724c | 50 | 155 | 218 |
| Miscellaneous | Cannabidiol | D512c | 25 | 121 | 169 |
| Miscellaneous | Fentanyl base | D918 | Withdrawn from sales | 155 | 218 |
| Miscellaneous | Ketamine hydrochloride | D686c | 50 | 155 | 218 |
| Miscellaneous | Meperidine hydrochloride (pethidine) | D443b | 20 | 121 | 169 |
| Miscellaneous | Methadone hydrochloride | D425b | 20 | 121 | 169 |
| Miscellaneous | Salbutamol  | M898c | 10 | 155 | 218 |
| Miscellaneous | d3-Salbutamol  | D939 | 1 | 155 | 218 |
| Miscellaneous | Salmeterol hydroxynaphthoate  | M904 | Exhausted | 155 | 218 |
| Miscellaneous | Selegiline hydrochloride  | D822 | 50 | 155 | 218 |
| Selective Androgen Receptor Modulators (SARMs) | Andarine | D1074 | 1 | 121 | 169 |
| Selective Androgen Receptor Modulators (SARMs) | Cardarine  | D1077 | 1 | 121 | 169 |
| Selective Androgen Receptor Modulators (SARMs) | Ligandrol (LGD-4033) | D1073 | 1 | 121 | 169 |
| Selective Androgen Receptor Modulators (SARMs) | MK-677  | D1078 | 1 | 121 | 169 |
| Selective Androgen Receptor Modulators (SARMs) | Ostarine | D1075 | 5 | 121 | 169 |
| Selective Androgen Receptor Modulators (SARMs) | RAD 140  | D1076 | 1 | 121 | 169 |
| Synthetic Cannabinoids | AM1220 1-[(1-Methylpiperidin-2-yl)methyl]-3-(1-naphthoyl)-indole  | D982 | 20 | 121 | 169 |
| Synthetic Cannabinoids  | AM2201 [1-(5-Fluoropentyl)-3-(1-napthoyl)-indole]  | D983 | 20 | 121 | 169 |
| Synthetic Cannabinoids  | JWH-018 [N-Pentyl-3-(1-naphthoyl)indole]  | D955 | 20 | 155 | 218 |
| Synthetic Cannabinoids  | JWH-210 [N-Pentyl-3-(4-ethyl-1-naphthoyl)indole]  | D984 | 5 | 121 | 169 |
| Synthetic Cannabinoids  | XLR-11 [1-(5-Fluoro-pentyl)-3-(2,2,3,3-tetramethylcyclopropoyl)indole] | D1000 | 25 | 121 | 169 |

\*Production funded by the US Anti-Doping Agency.

†Production funded by the Australian Government through the Anti-Doping Research Program.

### NMI Reference Materials

Reference Materials (RMs) produced by NMI are NATA accredited to ISO 17034:2016(E) and prepared in accordance with our accreditation.

RMs have demonstrated homogeneity and stability and are supplied with:

* Product information sheet
* Safety Data Sheet (SDS)

### NMI Certified Reference Materials

Certified Reference Materials (CRMs) produced by NMI have established metrological traceability to the SI unit for mass (kg).

CRMs have certified purity values, stated as a mass fraction with associated uncertainty and are supplied with:

* Certificate of Analysis (CoA)

### Candidate materials

All care is taken in the storage and handling of these materials however they are not independently certified by NMI.

Individual unit issue size varies depending on the amount available and the difficulty of obtaining the replacement compound. They can be provided with the analytical information available.

### Ampouled Materials

For each ampouled reference material the product information sheet / certificate of analysis will state the mass of analyte dispensed into each ampoule.

### GST charges (Australian customers only)

The prices quoted are EXCLUSIVE of Goods and Services Tax (GST). The current GST rate is 10%. Upon delivery of the requested reference materials NMI will issue valid tax invoices and, if required, adjustment notes as per the requirements of the GST legislation.

###  Delivery Fee

Delivery and handling fees apply for all orders and vary with destination. Please check the applicable rates when ordering.

### For further information

 + (612) 9449 0191

 chemref@measurement.gov.au

[www.measurement.gov.au/chemref](http://www.measurement.gov.au/chemref)

NMI reference materials available globally through our international partner:

LGC Standards

Web: [www.lgcstandards.com](http://www.lgcstandards.com)



**NATA logo notice**: Accredited for compliance with ISO 17034. Accreditation No. 198 / Corporate Site No. 14214.