Mallinckrodt provides research samples to numerous U.S. and international customers. We provide over 155 high-quality, purified research standards to pharmaceutical companies and analytical laboratories to aid in analytical methodology development, toxicity studies, early feasibility analyses, routine quality analyses, and other activities for dosage product development. The ARS program specializes in synthesizing very difficult, complex compounds. Each ARS order is custom packaged to meet the needs of each customer.

These products are intended for research and/or laboratory purposes only. The data contained herein is based on information we believe to be reliable. The products are offered in good faith, but without guarantee, because methods and conditions for use are beyond our control. A Mallinckrodt Material Safety Data Sheet (MSDS) and Certificate of Analysis will be supplied for products purchased. We strongly recommend that you study the MSDS for any product you use or come into contact with, and that MSDS review be included in employee training.
**ALFENTANIL**
0620  Alfentanil HCl ARS
0628  Dipropionyl Alfentanil ARS
0622  Hydroxymethylpiperidine Alfentanil ARS
0626  Methoxymethylpiperidine Alfentanil ARS
0625  N-Acetyl Alfentanil ARS

**APAP/PAP**

**APAP**
6386  2-Acetamidophenol (AOAP) ARS
8241  2-Hydroxy-4,5-diacetamidobiphenyl (Spot A Prime) ARS
9331  2-Hydroxy-4,5-diacetamidodiphenyl Ether (Spot A) ARS
7476  2,2’-Dihydroxy-5,5’-diacetamidobiphenyl (Spot B) ARS
8658  4-Hydroxy-4’-acetamidodiphenylamine (HACDA) ARS
5881  4,4’-Diacetamido diphenyl Ether (DAODA) ARS
2127  N,O-Diacetyl-p-aminophenol (DAPAP) ARS
2182  N-Propionyl-p-aminophenol (PPAP) ARS

**PAP**
6212  4-Hydroxydiphenylamine (HDPA) ARS
8963  4,4’-Diaminodiphenyl Ether (ODA) ARS

**BENZPHETAMINE**
9203  Benzphetamine HCl ARS
1533  Methamphetamine HCl ARS
9231  N-Benzylephedrine ARS
9257  N,N-Dibenzylamphetamine ARS

**COCaine**
1317  Cocaine Alkaloid ARS
1318  Cocaine HCl ARS
1427  Methyl Ecgonine ARS

**CODEINE**
1325  7,8-Dihydro-14-Hydroxycodeine ARS
1235  10-Hydroxycodeine ARS
6953  14-Hydroxycodeine ARS
1319  Codeine Alkaloid ARS
1545  Codeine Methyl Ether ARS
1565  Codeine-N-Oxide ARS
1321  Codeine Phosphate ARS
1322  Codeine Sulfate ARS
1544  Codeinone ARS
1564  Norcodeine ARS

**DEXTROAMPHETAMINE**
0730  Dextroamphetamine Sulfate ARS
1955  Dextroamphetamine Sulfate + RC ARS

**DIHYDROCODEINE (PARZONE)**
1319  Codeine Alkaloid ARS
1574  Dihydrocodeine Alkaloid (Parzone™) ARS
1575  Dihydrocodeine Bitartrate ARS
1573  Dihydrocodeine Methyl Ether ARS

**DIPHENOXYLATE**
1211  Diphenoxylate Base ARS
1210  Diphenoxylate HCl ARS
1209  Diphenoxylate Acid ARS

**FENTANYL**
0664  Acetyl Fentanyl Citrate ARS
0665  Butyryl Fentanyl Citrate ARS
1222  Fentanyl Alkaloid ARS
0666  Fentanyl Citrate ARS
1569  Fentanyl N-Oxide ARS
0902  N-Phenyl-1-(2-Phenylethyl)-4-Piperidinamine HCl ARS
1778  N-Phenylpropanamidine ARS
0669  Pyruvyl Fentanyl ARS

**FLUOXETINE**
3710  Fluoxetine Hydrochloride ARS
4393  Fluoxetine Hydrochloride Meta Isomer ARS

**HYDROCODONE**
1545  Codeine Methyl Ether ARS
1587  Hydrocodone + RC ARS
1224  Hydrocodone Base ARS
1226  Hydrocodone Bitartrate ARS
1584  Hydrocodone Diol ARS
7267  Hydrocodone N-Oxide HCl ARS

**HYDROMORPHONE BASE**
4375  2,2-Bis Hydromorphone ARS
7684  Dihydromorphone ARS
1233  Hydromorphone Base ARS
1234  Hydromorphone HCl ARS
4325  Hydromorphone N-Oxide ARS
7685  Morphone Alkaloid ARS
<table>
<thead>
<tr>
<th><strong>LEVORPHANOL</strong></th>
<th><strong>NALBUPHINE</strong></th>
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<tbody>
<tr>
<td>1413 Levorphanol Base ARS</td>
<td>0917 2,2'-Bisnalbuphine ARS</td>
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<tr>
<td>1415 Levorphanol Tartrate ARS</td>
<td>3326 6-Ketonalbuphine Base ARS</td>
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<tr>
<td>1622 Norlevorphan ARS</td>
<td>1633 10-Ketonalbuphine HCl ARS</td>
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<td><strong>LORATADINE</strong></td>
<td>3314 Alpha Noroxymorphol ARS</td>
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<tr>
<td>3061 8-Chloroazatadine ARS</td>
<td>0816 N-(cyclobutylcarbonyl)-α-noroxymorphol ARS</td>
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<td>3060 Loratadine ARS</td>
<td>3307 Nalbuphine Base ARS</td>
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<td><strong>MEPERIDINE</strong></td>
<td>3311 Nalbuphine Beta Epimer Base ARS</td>
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<td>1421 Meperidine Base ARS</td>
<td>3366 Nalbuphine HCl ARS</td>
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<tr>
<td>1419 Meperidine HCl ARS</td>
<td><strong>NALMEFENE</strong></td>
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<td>1422 Meperidinic Acid HCl ARS</td>
<td>1602 N-(3-butenyl)Nalmefene HCl ARS</td>
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<td>3011 N-Ethyl normeperidine HCl ARS</td>
<td>1608 Nalmefene Base ARS</td>
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<td>1623 Normeperidine HCl ARS</td>
<td>1609 Nalmefene HCl ARS</td>
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<td><strong>METHADONE</strong></td>
<td>4606 Naltrexone Base ARS</td>
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<td>1514 Methadone Base ARS</td>
<td><strong>NALOXONE</strong></td>
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<td>1425 Methadone HCl ARS</td>
<td>0827 7,8-Didehydronaloxone ARS</td>
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<td><strong>METHYLNALTREXONE BROMIDE</strong></td>
<td>1611 Naloxone Base ARS</td>
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<td>0329 3-Methoxynaltrexone Methobromide ARS</td>
<td>1618 Naloxone HCl ARS</td>
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<tr>
<td>1619 Naltrexone Methobromide ARS</td>
<td>4606 Naltrexone Base ARS</td>
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<td><strong>METHYLPHENIDATE</strong></td>
<td>5343 Noroxymorphone Base ARS</td>
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<tr>
<td>1631 Erythro-2-phenyl-2-(2-piperidyl) acetic acid HCl ARS</td>
<td><strong>NALTREXONE</strong></td>
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<tr>
<td>0019 Ethylphenidate HCl ARS</td>
<td>1476 3-Cyclopropylmethyl naltrexone ARS</td>
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<td>1576 Methylphenidate Erythro Isomer ARS</td>
<td>1861 6-Alpha Naltrexol HCl ARS</td>
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<td>1572 Methylphenidate HCl ARS</td>
<td>1342 6-Beta Naltroxol HCl ARS</td>
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<td>1555 Methylphenidate HCl + RC ARS</td>
<td>1311 6-Beta Naltrexol ARS</td>
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<td>1579 Three-o-phenyl-2-piperidine acetic acid ARS</td>
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<td><strong>MORPHINE</strong></td>
<td>1412 10-Keto Naltrexone Base ARS</td>
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<td>1309 Apomorphine ARS</td>
<td>1475 N-(3-butenyl) Noroxymorphol HCl ARS</td>
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<tr>
<td>1319 Codeine Alkaloid ARS</td>
<td>1437 N-Formyl Noroxymorphone ARS</td>
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<td>7684 Dihydromorphine ARS</td>
<td>4646 Naltrexone + RC ARS</td>
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<td>7685 Morphine Alkaloid ARS</td>
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<td>1429 Morphine HCl ARS</td>
<td>1477 Naltrexone HCl ARS</td>
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<td>1526 Morphine N-Oxide ARS</td>
<td>1619 Naltrexone Methobromide ARS</td>
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<td>1522 Morphine Sulfate ARS</td>
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<td>7651 Morphinone Hydrochloride ARS</td>
<td>0919 Pseudonaltxeone (2,2-Bis Naltrexone) ARS</td>
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<td>1525 Normorphine ARS</td>
<td><strong>NOSCAPINE</strong></td>
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<td>1524 Pseudomorphine ARS</td>
<td>0901 Noscapine Base ARS</td>
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<td>0900 Noscapine HCl ARS</td>
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### OPIUM
- 0839 10-Hydroxythebaine ARS
- 1319 Codeine Alkaloid ARS
- 7684 Dihydromorphone ARS
- 0901 Noscapine Base ARS
- 0900 Noscapine HCl ARS
- 0353 Oripavine ARS
- 0912 Papaverine Base ARS
- 5877 Papaverine Hydrochloride ARS
- 0808 Thebaine Alkaloid ARS

### OXYCODONE
- 1325 7,8-Dihydro-14-Hydroxycodeine (6-Oxycodol) ARS
- 4548 10-Beta-Hydroxyoxycodone Base ARS
- 6685 10-Keto Oxycodone Base ARS
- 1405 14-Hydroxycodeinone ARS
- 8864 Noroxycodone Base ARS
- 5343 Noroxymorphone Base ARS
- 8862 Oxycodone Base ARS
- 0911 Oxycodone HCl ARS
- 8871 Oxycodone N-Oxide ARS
- 0808 Thebaine Alkaloid ARS

### OXYMORPHONE
- 0883 1-Bromo Oxy morphine Base ARS
- 1312 6-Beta Oxymorphol Base ARS
- 2879 10-Alpha-Hydroxyoxymorphine Base ARS
- 0797 10-Keto Oxy morphine Base ARS
- 0871 14-Hydroxy morphinone HCl ARS
- 0818 2,2-Bisoxymorphine ARS
- 5343 Noroxymorphone Base ARS
- 0892 Oxy morphine HCl ARS
- 4926 Oxy morphine Hydrochloride +RC ARS
- 5275 Oxy morphine Base ARS
- 0854 Oxy morphine N-Oxide ARS

### PEMOLINE
- 6999 5-Phenyl-oxazolidine-2,4-dione ARS
- 2508 Mandelamide ARS
- 3137 Mandelic Acid ARS
- 1501 Pemoline ARS

### PROPOXYPHENE
- 1308 Acetoxyphene ARS
- 1212 d-Oxyphene ARS
- 1204 Propoxyphene + RC ARS
- 0914 Propoxyphene HCl ARS
- 0913 Propoxyphene Napsylate ARS

### REMIFENTANYL
- 7528 Remifentanyl Hydrochloride ARS

### SUFENTANIL
- 1006 N-(2-Thien-2-ylethyl)-4-(Phenylamino)-4-(Hydroxymethyl) Piperidine ARS
- 1007 N-(2-Thien-2-ylethyl)-4-(Phenylamino)-4-(Methoxymethyl) Piperidine ARS (Despropionyl Sufentanil)
- 9995 N-(2-Thien-2-ylethyl)-4-(Phenylamino)-4-Piperidine Carbox (n-Methyl) Analide ARS
- 0806 Sufentanil Base ARS
- 0801 Sufentanil Citrate ARS
- 1053 Sufentanil Methylated Rearranged Step 4 ARS

### TRAMADOL
- 3339 Mono-O-Desmethyltramadol HCl ARS
- 1119 Tramadol HCl ARS

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**SOON TO BE RELEASED**
- 3752 10-Ketonaloxone Base ARS
- 1630 Three-2-phenyl-2-(2-piperidyl) acetamide ARS

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*These materials are works in progress. Some are available at this time as book and page materials which include qualitative analysis only:*
- 6-Alpha-Oxymorphol Base
- 10-Ketubrenorphine Base
- 10-Keto Naloxone Base
- 10-Alpha-Hydroxy-Oxycodone Base
- 10-Beta-Hydroxy-Oxymorphone Base
- 10-Alpha-Hydroxy-Naloxone Base
- 10-Alpha-Hydroxy-Naltrexone Base
- 10-Beta-Hydroxy-Naltrexone Base
- N-Benzylpropylhexedrine Hydrochloride*