

**CPC****COOPERATIVE PATENT CLASSIFICATION****C07J****STEROIDS** ( [seco-steroids](#) [C07C](#) )**NOTE**

This subclass covers compounds containing a cyclopenta[a]hydrophenanthrene skeleton or a ring structure derived therefrom:

- by contraction or expansion of one ring by one or two atoms;
- by contraction or expansion of two rings each by one atom;
- by contraction of one ring by one atom and expansion of one ring by one atom;
- by substitution of one or two carbon atoms of the cyclopenta[a]hydrophenanthrene skeleton, which are not shared by rings, by hetero atoms, in combination with the above defined contraction or expansion or not, or;
- by condensation with carbocyclic or heterocyclic rings in combination with one or more of the foregoing alterations or not.

**Guidance heading:** Normal steroids, i.e. cyclopenta(a)hydrophenanthrenes, containing carbon, hydrogen, halogen or oxygen

**C07J 1/00**

**Normal steroids containing carbon, hydrogen, halogen or oxygen, not substituted in position 17 beta by a carbon atom, e.g. estrane, androstane**

- C07J 1/0003 . { Androstane derivatives }
- C07J 1/0007 .. { not substituted in position 17 }
- C07J 1/0011 .. { substituted in position 17 by a keto group }
- C07J 1/0014 .. { substituted in position 17 alfa, not substituted in position 17 beta }
- C07J 1/0018 .. { substituted in position 17 beta, not substituted in position 17 alfa }
- C07J 1/0022 ... { the substituent being an OH group free esterified or etherified }
- C07J 1/0025 .... { Esters }
- C07J 1/0029 .... { Ethers }
- C07J 1/0033 .. { substituted in position 17 alfa and 17 beta }
- C07J 1/0037 ... { the substituent in position 17 alfa being a saturated hydrocarbon group }
- C07J 1/004 ... { the substituent in position 17 alfa being an unsaturated hydrocarbon group }
- C07J 1/0044 .... { Alkenyl derivatives }
- C07J 1/0048 .... { Alkynyl derivatives }
- C07J 1/0051 . { Estrane derivatives }
- C07J 1/0055 .. { not substituted in position 17 }
- C07J 1/0059 .. { substituted in position 17 by a keto group }
- C07J 1/0062 .. { substituted in position 17 alfa not substituted in position 17 beta }
- C07J 1/0066 .. { substituted in position 17 beta not substituted in position 17 alfa }

C07J 1/007	...	{ the substituent being an OH group free esterified or etherified }
C07J 1/0074	....	{ Esters }
C07J 1/0077	....	{ Ethers }
C07J 1/0081	..	{ Substituted in position 17 alfa and 17 beta }
C07J 1/0085	...	{ the substituent in position 17 alfa being a saturated hydrocarbon group }
C07J 1/0088	...	{ the substituent in position 17 alfa being an unsaturated hydrocarbon group }
C07J 1/0092	....	{ Alkenyl derivatives }
C07J 1/0096	....	{ Alkynyl derivatives }

**C07J 3/00**      **Normal steroids containing carbon, hydrogen, halogen or oxygen, substituted in position 17 beta by one carbon atom**

C07J 3/005	.	{ the carbon atom being part of a carboxylic function }
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**C07J 5/00**      **Normal steroids containing carbon, hydrogen, halogen or oxygen, substituted in position 17 beta by a chain of two carbon atoms, e.g. pregnane and substituted in position 21 by only one singly bound oxygen atom, { i.e. only one oxygen bound to position 21 by a single bond }**

C07J 5/0007	.	{ not substituted in position 17 alfa }
C07J 5/0015	..	{ not substituted in position 16 }
C07J 5/0023	..	{ substituted in position 16 }
C07J 5/003	...	{ by a saturated or unsaturated hydrocarbon group including 16-alkylidene substitutes }
C07J 5/0038	....	{ by an alkyl group }
C07J 5/0046	.	{ substituted in position 17 alfa }
C07J 5/0053	..	{ not substituted in position 16 }
C07J 5/0061	..	{ substituted in position 16 }
C07J 5/0069	...	{ by a saturated or unsaturated hydrocarbon group }
C07J 5/0076	....	{ by an alkyl group }
C07J 5/0084	....	{ by an alkylene group }
C07J 5/0092	...	{ by an OH group free esterified or etherified }

**C07J 7/00**      **Normal steroids containing carbon, hydrogen, halogen or oxygen substituted in position 17 beta by a chain of two carbon atoms ( [C07J 5/00](#) takes precedence )**

C07J 7/0005	.	{ not substituted in position 21 }
C07J 7/001	..	{ substituted in position 20 by a keto group }
C07J 7/0015	...	{ not substituted in position 17 alfa }
C07J 7/002	....	{ not substituted in position 16 }
C07J 7/0025	....	{ substituted in position 16 }
C07J 7/003	.....	{ by a saturated or unsaturated hydrocarbon group }
C07J 7/0035	.....	{ by a hydroxy group free esterified or etherified }
C07J 7/004	...	{ substituted in position 17 alfa }

C07J 7/0045	.... { not substituted in position 16 }
C07J 7/005	.... { substituted in position 16 }
C07J 7/0055	..... { by a saturated or unsaturated hydrocarbon group }
C07J 7/006	..... { by a hydroxy group free esterified or etherified }
C07J 7/0065	.. { substituted in position 20 by an OH group free esterified or etherified }
C07J 7/007	... { not substituted in position 17 alfa }
C07J 7/0075	... { substituted in position 17 alfa }
C07J 7/008	. { substituted in position 21 }
C07J 7/0085	.. { by an halogen atom }
C07J 7/009	.. { by only one oxygen atom doubly bound }
C07J 7/0095	.. { carbon in position 21 is part of carboxylic group }
<b>C07J 9/00</b>	<b>Normal steroids containing carbon, hydrogen, halogen or oxygen substituted in position 17 beta by a chain of more than two carbon atoms, e.g. cholane, cholestane, coprostane</b>
C07J 9/005	. { containing a carboxylic function directly attached or attached by a chain containing only carbon atoms to the cyclopenta[a]hydrophenanthrene skeleton }
<b>C07J 11/00</b>	<b>Normal steroids containing carbon, hydrogen, halogen or oxygen, not substituted in position 3</b>
<b>C07J 13/00</b>	<b>Normal steroids containing carbon, hydrogen, halogen or oxygen having a carbon-to-carbon double bond from or to position 17 { ( for carbonyl groups <a href="#">C07J 1/00</a> ) }</b>
C07J 13/002	. { with double bond in position 13 (17) }
C07J 13/005	. { with double bond in position 16 (17) }
C07J 13/007	. { with double bond in position 17 (20) }
<b>C07J 15/00</b>	<b>Stereochemically pure steroids containing carbon, hydrogen, halogen or oxygen having a partially or totally inverted skeleton, e.g. retrosteroids, L-isomers</b>
C07J 15/005	. { Retrosteroids ( 9 beta 10 alfa ) }
<b>C07J 17/00</b>	<b>Normal steroids containing carbon, hydrogen, halogen or oxygen, having an oxygen-containing hetero ring not condensed with the cyclopenta(a)hydrophenanthrene skeleton ( cardanolide, bufanolide <a href="#">C07J 19/00</a> )</b>
C07J 17/005	. { Glycosides }
<b>C07J 19/00</b>	<b>Normal steroids containing carbon, hydrogen, halogen or oxygen, substituted in position 17 by a lactone ring</b>

C07J 19/005 . { Glycosides }

**C07J 21/00** Normal steroids containing carbon, hydrogen, halogen or oxygen having an oxygen-containing hetero ring spiro-condensed with the cyclopenta(a)hydrophenanthrene skeleton

C07J 21/001 . { Lactones }

C07J 21/003 .. { at position 17 }

C07J 21/005 . { Ketals }

C07J 21/006 .. { at position 3 }

C07J 21/008 .. { at position 17 }

**Guidance heading:** Normal steroids, i.e. cyclopenta(a)hydrophenanthrenes, containing sulfur

**C07J 31/00** Normal steroids containing one or more sulfur atoms not belonging to a hetero ring

C07J 31/003 . { the S atom directly linked to a ring carbon atom of the cyclopenta(a)hydrophenanthrene skeleton }

C07J 31/006 . { not covered by [C07J 31/003](#) }

**C07J 33/00** Normal steroids having a sulfur-containing hetero ring spiro-condensed or not condensed with the cyclopenta(a)hydrophenanthrene skeleton

C07J 33/002 . { not condensed }

C07J 33/005 . { spiro-condensed }

C07J 33/007 .. { Cyclic thioketals }

**Guidance heading:** Normal steroids, i.e. cyclopenta(a)hydrophenanthrenes, containing nitrogen

**C07J 41/00** Normal steroids containing one or more nitrogen atoms not belonging to a hetero ring

C07J 41/0005 . { the nitrogen atom being directly linked to the cyclopenta(a)hydro phenanthrene skeleton }

C07J 41/0011 .. { Unsubstituted amino radicals }

C07J 41/0016 .. { Oximes }

C07J 41/0022 .. { Isocyanates; Isothiocyanates }

C07J 41/0027 .. { Azides }

C07J 41/0033 . { not covered by [C07J 41/0005](#) }

**NOTE**

In groups [C07J 41/0038](#) to [C07J 41/0094](#) all references to substituents in position 17-beta of the steroid skeleton include substituents at the 17-position when there is a double bond to or from position 17, and all references to an amide group include all nitrogen substituted carbonyl groups

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|-------------------|---|
| C07J 41/0038      | .. { with an androstane skeleton, including 18- or 19-substituted derivatives, 18-nor derivatives and also derivatives where position 17-beta is substituted by a carbon atom not directly bonded to a further carbon atom and not being part of an amide group }   |
| C07J 41/0044      | .. { with an estrane or gonane skeleton, including 18-substituted derivatives and derivatives where position 17-beta is substituted by a carbon atom not directly bonded to another carbon atom and not being part of an amide group }  |
| C07J 41/005       | .. { the 17-beta position being substituted by an uninterrupted chain of only two carbon atoms, e.g. pregnane derivatives }   |
| C07J 41/0055      | .. { the 17-beta position being substituted by an uninterrupted chain of at least three carbon atoms which may or may not be branched, e.g. cholane or cholestane derivatives, optionally cyclised, e.g. 17-beta-phenyl or 17-beta-furyl derivatives }  |
| C07J 41/0061      | ... { one of the carbon atoms being part of an amide group }  |
| C07J 41/0066      | .. { the 17-beta position being substituted by a carbon atom forming part of an amide group }   |
| C07J 41/0072      | .. { the A ring of the steroid being aromatic }   |
| C07J 41/0077      | .. { substituted in position 11-beta by a carbon atom, further substituted by a group comprising at least one further carbon atom }   |
| C07J 41/0083      | ... { substituted in position 11-beta by an optionally substituted phenyl group not further condensed with other rings }  |
| C07J 41/0088      | .. { containing unsubstituted amino radicals }  |
| C07J 41/0094      | .. { containing nitrile radicals, including thiocyanide radicals }  |
| <b>C07J 43/00</b> | <b>Normal steroids having a nitrogen-containing hetero ring spiro-condensed or not condensed with the cyclopenta(a)hydrophenanthrene skeleton</b>   |
| C07J 43/003       | . { not condensed }   |
| C07J 43/006       | . { spiro-condensed }   |
| <b>C07J 51/00</b> | <b>Normal steroids with unmodified cyclopenta(a)hydrophenanthrene skeleton not provided for in groups <a href="#">C07J 1/00</a> to <a href="#">C07J 43/00</a></b>   |
| <b>C07J 53/00</b> | <b>Steroids in which the cyclopenta(a)hydrophenanthrene skeleton has been modified by condensation with a carbocyclic rings or by formation of an additional ring by means of a direct link between two ring carbon atoms, { including carboxylic rings fused to the cyclopenta(a)hydrophenanthrene skeleton are included in this class }</b> |
| C07J 53/001       | . { spiro-linked }  |
| C07J 53/002       | . { Carbocyclic rings fused }   |

- C07J 53/004      ..      { 3 membered carbocyclic rings }
- C07J 53/005      ...      { in position 12 }
- C07J 53/007      ...      { in position 6-7 }
- C07J 53/008      ...      { in position 15/16 }

**Guidance heading:** Nor- or homo steroids

**C07J 61/00**      **Steroids in which the cyclopenta(a)hydrophenanthrene skeleton has been modified by contraction of only one ring by one or two atoms**

**C07J 63/00**      **Steroids in which the cyclopenta(a)hydrophenanthrene skeleton has been modified by expansion of only one ring by one or two atoms**

- C07J 63/002      .      { Expansion of ring A by one atom, e.g. A homo steroids }
- C07J 63/004      .      { Expansion of ring B by one atom, e.g. B homo steroids }
- C07J 63/006      .      { Expansion of ring C by one atom, e.g. C homo steroids }
- C07J 63/008      .      { Expansion of ring D by one atom, e.g. D homo steroids }

**C07J 65/00**      **Steroids in which the cyclopenta(a)hydrophenanthrene skeleton has been modified by contraction of two rings, each by one atom**

**C07J 67/00**      **Steroids in which the cyclopenta(a)hydrophenanthrene skeleton has been modified by expansion of two rings, each by one atom**

**C07J 69/00**      **Steroids in which the cyclopenta(a)hydrophenanthrene skeleton has been modified by contraction of only one ring by one atom and expansion of only one ring by one atom**

**C07J 71/00**      **Steroids in which the cyclopenta(a)hydrophenanthrene skeleton is condensed with a heterocyclic ring ( spiro-condensed heterocyclic rings [C07J 21/00](#) , [C07J 33/00](#) , [C07J 43/00](#) )**

- C07J 71/0005      .      { Oxygen-containing hetero ring }
- C07J 71/001      ..      { Oxiranes }
- C07J 71/0015      ...      { at position 9(11) }
- C07J 71/0021      ...      { at position 14(15) }
- C07J 71/0026      ..      { cyclic ketals }
- C07J 71/0031      ...      { at positions 16, 17 }
- C07J 71/0036      .      { Nitrogen-containing hetero ring }
- C07J 71/0042      ..      { Nitrogen only }
- C07J 71/0047      ...      { at position 2(3) }

- C07J 71/0052      ...      { at position 16(17) }
- C07J 71/0057      ..      { Nitrogen and oxygen }
- C07J 71/0063      ...      { at position 2(3) }
- C07J 71/0068      ...      { at position 16(17) }
  
- C07J 71/0073      .      { Sulfur-containing hetero ring }
- C07J 71/0078      ..      { containing only sulfur }
- C07J 71/0084      ...      { Episulfides }
- C07J 71/0089      ..      { containing sulfur and oxygen }
- C07J 71/0094      ..      { containing sulfur and nitrogen }

**C07J 73/00      Steroids in which the cyclopenta[a]hydrophenanthrene skeleton has been modified by substitution of one or two carbon atoms by hetero atoms**

- C07J 73/001      .      { by one hetero atom }
- C07J 73/003      ..      { by oxygen as hetero atom }
- C07J 73/005      ..      { by nitrogen as hetero atom }
- C07J 73/006      ..      { by sulfur as hetero atom }
  
- C07J 73/008      .      { by two hetero atoms }

**C07J 75/00      Processes for the preparation of steroids in general**

- C07J 75/005      .      { Preparation of steroids by cyclization of non-steroid compounds }