

C07J

STEROIDS (seco-steroids C07C)

Definition statement

This subclass/group covers:

12

13 17

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2 10 9 14 15

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3 4 5 6 7

Compounds containing a cyclopenta[a]hydrophenanthrene skeleton (see above) 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.

Preparation of steroids including purification, separation, stabilisation or use of additives unless provided for elsewhere, as specified below.

Treatment and modification of steroids provided that

- the treatment is not provided for elsewhere and
- the resultant product is a compound under the subclass definition.

Relationship between large subject matter areas

In class C07, in the absence of an indication to the contrary, a compound is classified in the last appropriate place, i.e. in the last appropriate subclass. For example cyclopenta [a] hydrophenantrenes are classified in subclass [C07J](#) as steroids and not in subclasses [C07C](#) or [C07D](#) as carbocyclic or heterocyclic compounds.

Subclass [C07J](#) is a function-oriented entry for the compounds themselves and does not cover the application or use of the compounds under the subclass definition. For classifying such information other entries in the IPC exist, for example:

Subclass [A01N](#): Preservation of bodies of humans or animals or plants or parts thereof; biocides, e.g. as disinfectants, as pesticides, as herbicides; pest repellants or attractants; plant growth regulators.

Subclass [A61K](#): Preparations for medical, dental or toilet purposes.

Multilpe classification :

When a steroid forms a salt, an adduct or a complex with another organic compound, classification is also made in the entry in class C07 for this organic compound.

Biocidal, pest repellent, pest attractant or plant growth regulatory activity of compounds or preparations is further classified in subclass [A01P](#).

Therapeutic activity of compounds is further classified in subclass [A61P](#).

Cosmetic activity of compounds is further classified in subclass [A61Q](#).

References relevant to classification in this subclass

This subclass/group does not cover:

Seco-steroids	C07C
Compounds with a cyclopenta[a]hydrophenanthrene skeleton wherein a carbon atom shared by two steroid rings is replaced by a heteratom	C07D
Fermentation or enzyme-using processes to synthesise steroids	C12P 33/00
Electrolytic production of organic compounds	C25B 3/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Medicinal preparations containing organic active ingredients:	A61K
Medicinal preparations containing cyclopenta[a]hydrophenanthrene ring systems; Derivatives, e.g. steroids and medicinal indications of such compounds	A61K 31/56
Macromolecular compounds	C08

Special rules of classification within this subclass

In this subclass, in the absence of an indication to the contrary (e.g., [C07J 5/00](#) and [C07J 7/00](#)), a compound is classified in the last appropriate place.

Salts of steroids are classified in the groups for these steroids. Metal chelates containing steroids are dealt with in the same way.

However, processes for producing steroid compounds (as defined above) are classified with the symbols for the compound produced ([C07J 75/00](#) is not used), except where the process involves cyclisation of non-steroid compounds (where [C07J 75/005](#) is used)

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

A-, B-, C- or D-homosteroid	Compound in which a cyclopenta[a]hydrophenanthrene skeleton is modified by expansion of rings A, B, C or D correspondingly by one atom (the prefix "homo" may also mean that one methyl or methylene group is added in certain position, e.g. 18-homosteroids).
A-, B-, C- or D-bishomosteroid	Compound in which a cyclopenta[a]hydrophenanthrene skeleton is modified by expansion of rings A, B, C or D correspondingly by two atoms.

A-, B-, C- or D-norsteroid	Compound in which a cyclopenta[a]hydrophenanthrene skeleton is modified by contraction of rings A, B, C or D correspondingly by one atom (the prefix "nor" may also mean that one methyl group in certain position is substituted by hydrogen atom, e.g. 19-norsteroids, or one methylene group among non-ring members in certain position is absent).
A-, B-, C- or D-bisnorsteroid	compound in which a cyclopenta[a]hydrophenanthrene skeleton is modified by contraction of rings A, B, C or D correspondingly by two atoms.
"alpha"	relates to stereoisomers and designates atoms or groups of atoms that are arranged below the plane of a ring system (the bond between such atoms or groups of atoms and a ring system is represented by a dotted line) provided that a cyclopenta[a]hydrophenanthrene skeleton is drawn on the plane so that rings A, B, C and D are arranged from left to right.
"beta"	relates to stereoisomers and designates atoms or groups of atoms that are arranged above the plane of a ring system (the bond between such atoms or groups of atoms and a ring system is represented by a thick or uninterrupted line) provided that a cyclopenta[a]hydrophenanthrene skeleton is drawn on the plane so that rings A, B, C and D are arranged from left to right.
Bile acids	Steroids having a hydroxy-group and a five-carbon-atom side-chain terminating in a carboxyl group, e.g. cholic acid.
Normal steroid	Compound containing non-modified cyclopenta[a]hydrophenanthrene skeleton.

Seco-steroid	Compound which can be obtained from steroids by a break of one of the bonds in cyclopenta[a]hydrophenanthrene skeleton.
Sterols	Steroid alcohols; contain cyclopenta[a]hydrophenanthrene skeleton plus an 8 to 10-carbon atom side-chain and a hydroxy-group, e.g. cholesterol, ergosterol".
Substitution of steroids in certain position	means substitution of hydrogen atom bound to the carbon atom of the cyclopenta[a]hydrophenanthrene skeleton in that position.

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 3/00

Normal steroids containing carbon, hydrogen, halogen or oxygen, substituted in position 17 beta by one carbon atom

Definition statement

This subclass/group covers:

Compounds where the single carbon atom in position 17 beta is indirectly linked to other carbon atoms, but only via a heteroatom (e.g. where the group in position 17 beta is a carboxy ester group such as: 17 beta-CO₂-Me or an amide group such as: 17 beta-C(O)NHMe).

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, [N: i.e. only one oxygen bound to position 21 by a single bond]

C07J 7/00

Normal steroids containing carbon, hydrogen, halogen or oxygen substituted in position 17 beta by a chain of two carbon atoms (C07J5/00 takes precedence)

References relevant to classification in this group

This subclass/group does not cover:

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, [N: i.e. only one oxygen bound to position 21 by a single bond]	C07J 5/00
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Special rules of classification within this group

[C07J 5/00](#) takes precedence.

C07J 9/00

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

C07J 11/00

Normal steroids containing carbon, hydrogen, halogen or oxygen, not substituted in position 3

C07J 13/00

Normal steroids containing carbon, hydrogen, halogen or oxygen having a carbon-to-carbon double bond from or to position 17 [N: (for carbonyl groups C07J1/00)]

Definition statement

This subclass/group covers:

Covers compounds where the atom to which the 17-position is double bonded is a carbon atom either within the ring system of the cyclopenta[a]hydrophenanthrene skeleton or is an exocyclic carbon atom.

References relevant to classification in this group

This subclass/group does not cover:

Compounds where the other atom involved in the double is a heteroatom:	C07J 1/0011 , C07J 1/0059 , C07J 31/003 , C07J 41/0005 , C07J 51/00
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C07J 15/00

Stereochemically pure steroids containing carbon, hydrogen, halogen or oxygen having a partially or totally inverted skeleton, e.g. retrosteroids, L-isomers

Definition statement

This subclass/group covers:

The stereochemistry referred to is that of the chiral centres within the cyclopenta[a]hydrophenanthrene ring system. The normal steroid stereochemistry is 8#, 9#, 10#, 13#, 14# and inversion at any of these positions results in this sub-group being relevant, unless the last place rule causes a later sub-group to be relevant (e.g. a 9#-estrone is covered here, but 9#-estrone carrying an amino substituent would be covered by [C07J 41/00](#)).

Special rules of classification within this group

The stereochemistry at position 5 is not relevant in deciding whether or not a compound falls within [C07J 13/00](#).

C07J 17/00

Normal steroids containing carbon, hydrogen, halogen or oxygen, having an oxygen-containing hetero ring not condensed with the cyclopenta(a)hydrophenanthrene skeleton (cardanolide, bufanolide C07J19/00)

Informative references

Attention is drawn to the following places, which may be of interest for search:

Cardanolide, bufanolide	C07J 19/00
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C07J 19/00

Normal steroids containing carbon, hydrogen, halogen or oxygen, substituted in position 17 by a lactone ring

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 31/00

Normal steroids containing one or more sulfur atoms not belonging to a hetero ring

C07J 33/00

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

C07J 41/00

Normal steroids containing one or more nitrogen atoms not belonging to a hetero ring

Special rules of classification within this group

[C07J 41/0055](#) and [C07J 41/0061](#) cover compounds where there are less than three carbon atoms which are not in a ring, provided that the total number of carbon atoms (in a ring or not) attached to the 17.beta.-position and not separated therefrom by any heteroatom, is at least three.

C07J 43/00

Normal steroids having a nitrogen-containing hetero ring spiro-condensed or not condensed with the cyclopenta(a)hydrophenanthrene skeleton

References relevant to classification in this group

This subclass/group does not cover:

C07J 43/006 does not cover steroids wherein the nitrogen-heterocyclic group is condensed to the cyclopenta[a]hydrophenanthrene skeleton sharing two or more atoms.	C07J 71/0036
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C07J 51/00

Normal steroids with unmodified cyclopenta(a)hydrophenanthrene skeleton not provided for in groups C07J1/00 to C07J43/00

Definition statement

This subclass/group covers:

This subgroup relates to steroid compounds containing elements other than C, H, O, S, N and halogens, in particular B, P, Si including where these heteroatoms are contained in a ring structure which is not condensed or is spiro-condensed to the steroid ring system.

This subgroup also includes steroid compounds which contain chelating groups which are chelated to a metal ion.

References relevant to classification in this group

This subclass/group does not cover:

Where the element in question (e.g. P) is only present as a salt (e.g. an amino-steroid compound existing as a phosphate salt).	C07J 1/00 - C07J 43/00
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C07J 53/00

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, [N: including carboxylic rings fused to the cyclopenta(a)hydrophenanthrene skeleton are included in this class]

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 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 C07J21/00, C07J33/00, C07J43/00)

References relevant to classification in this group

This subclass/group does not cover:

C07J 71/00 does not cover steroids spiro-condensed with heterocyclic groups	C07J 21/00 , C07J 33/005 , C07J 43/006 , C07J 51/00
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Special rules of classification within this group

[C07J 71/0005](#) is the relevant symbol for Spirostane derivatives.

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

Special rules of classification within this group

Where the steroid having heteroatoms in one of the rings of the cyclopenta[a]hydrophenanthrene skeleton is prepared by cyclisation of non-steroid starting materials see also [C07J 75/005](#).

C07J 75/00

Processes for the preparation of steroids in general

Definition statement

This subclass/group covers:

Processes for the preparation of steroids involving the cyclisation of non-steroid compounds.

References relevant to classification in this group

This subclass/group does not cover:

Processes for the preparation of steroids which do not involve cyclisation of non-steroid compounds	C07J 1/00 - C07J 73/00
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Special rules of classification within this group

[C07J 75/00](#) is never used, in particular it is not used where the steroid is prepared but not by the cyclisation of non-steroid compounds (the process for the production of steroids not involving this method is classified in [C07J 1/00](#) - [C07J 73/00](#) in the same place as the compound produced). [C07J 75/005](#) is used where the steroid compound is prepared by cyclisation of non-steroid compounds.