SECTION C — CHEMISTRY; METALLURGY

C07 ORGANIC CHEMISTRY

C07H SUGARS; DERIVATIVES THEREOF; NUCLEOSIDES; NUCLEOTIDES; NUCLEIC ACIDS (derivatives of aldonic or saccharic acids C07C, C07D; aldonic acids, saccharic acids C07C 59/105, C07C 59/285; cyanohydrins C07C 255/16; glycals C07D; compounds of unknown constitution C07G; polysaccharides, derivatives thereof C08B; DNA or RNA concerning genetic engineering, vectors, e.g. plasmids, or their isolation, preparation or purification C12N 15/00; sugar industry C13) **[2]**

Note(s) [4, 7, 2006.01]

1. This subclass covers compounds containing saccharide radicals (see the definitions in Note (3) below).
2. This subclass does not cover polysaccharides which for the purpose of this subclass are defined as having more than five saccharide radicals attached to each other by glycosidic linkages.
3. In this subclass, the following expressions are used with the meanings indicated:
   - "saccharide radical" which is derived from acyclic polyhydroxy-aldehydes or acyclic polyhydroxy-ketones, or from their cyclic tautomers, by removing hydrogen atoms or by replacing hetero bonds to oxygen by the same number of hetero bonds to halogen, nitrogen, sulfur, selenium, or tellurium, in accordance with either of the following definitions:
     a. It
        i. consists of an uninterrupted carbon skeleton and oxygen atoms directly attached thereto, and
        ii. is considered to be terminated by every bond to a carbon atom of a cyclic structure and by every bond to a carbon atom having three bonds to hetero atoms, e.g. ester or nitrile radicals, and
        iii. contains within the carbon skeleton an unbranched sequence of at the most six carbon atoms in which at least three carbon atoms — at least two in the case of a skeleton having only four carbon atoms — have one single bond to an oxygen atom as the only hetero bond, and
           A. in a cyclic or acyclic sequence, at least one other carbon atom has two single bonds to oxygen atoms as the only hetero bonds, or
           B. in an acyclic sequence, at least one other carbon atom has one double bond to an oxygen atom as the only hetero bond,

        the said sequence containing at the most one double bond, i.e. C=C or possibly ketalised C(=O), in addition to the hetero bonds mentioned above under (A) or (B), e.g. the compounds

        an unbranched sequence of at the most six carbon atoms, having bonds to oxygen as defined in this Note

        n being an integer, are classified in group C07H 3/02 ;
     b. It is also a radical derived from a radical as defined in (a) above by replacing at the most four of the specified hetero bonds to oxygen by the same number of hetero bonds to halogen, nitrogen, sulfur, selenium, or tellurium;
   - "heterocyclic radical" or "hetero ring" is considered to exclude saccharide radicals as defined above.
4. Attention is drawn to Note (3) after class C07, which defines the last place priority rule applied in the range of subclasses C07C-C07K and within these subclasses.
5. Therapeutic activity of compounds is further classified in subclass A61P .

Subclass index

GENERAL PROCESSES.....1/00
COMPOUNDS
saccharides, deoxysugars, anhydrosugars, osones.....3/00
aminosugars, aza-, thio-, seleno-, telluro-analogues.....5/00
sugar esters.....11/00, 13/00
sugar ethers, glycosides.....15/00, 17/00
cyclic acetals.....9/00
nucleosides.....19/00
nucleotides.....19/00, 21/00
nucleic acids.....21/00

derivatives containing acyclic radicals.....7/00, 13/00, 15/00
derivatives containing carbocyclic radicals.....7/00, 13/00, 15/00
derivatives containing heterocyclic radicals.....9/00, 13/10, 15/26, 17/00, 19/00, 21/00
derivatives containing boron, silicon or a metal.....23/00
SUBJECT MATTER NOT PROVIDED FOR IN OTHER GROUPS OF THIS SUBCLASS.....99/00

1/00 Processes for the preparation of sugar derivatives [2, 2006.01]

1/02 • Phosphorylation **[2, 2006.01]**

1/04 • • Introducing polyphosphoric acid radicals **[2, 2006.01]**

1/06 • Separation; Purification **[2, 2006.01]**

1/08 • • from natural products **[2, 2006.01]**

3/00 Compounds containing only hydrogen atoms and saccharide radicals having only carbon, hydrogen, and oxygen atoms (preparation by hydrolysis of di-or polysaccharides C13; separation or purification of sucrose, glucose, fructose, lactose or maltose C13) **[2, 2006.01]**

3/02 • Monosaccharides **[2, 2006.01]**

3/04 • Disaccharides **[2, 2006.01]**

3/06 • Oligosaccharides, i.e. having three to five saccharide radicals attached to each other by glycosidic linkages **[2, 2006.01]**

3/08 • Deoxysugars; Unsaturated sugars (1,2-dideoxy-1-enoses C07D); Osones **[2, 2006.01]**

3/10 • Anhydrosugars, e.g. epoxides **[2, 2006.01]**

5/00 Compounds containing saccharide radicals in which the hetero bonds to oxygen have been replaced by the same number of hetero bonds to halogen, nitrogen, sulfur, selenium, or tellurium [2, 2006.01]

5/02 • to halogen **[2, 2006.01]**

5/04 • to nitrogen **[2, 2006.01]**

5/06 • • Aminosugars **[2, 2006.01]**

5/08 • to sulfur, selenium, or tellurium **[2, 2006.01]**

5/10 • • to sulfur **[2, 2006.01]**

7/00 Compounds containing non-saccharide radicals linked to saccharide radicals by a carbon-to-carbon bond [2, 2006.01]

7/02 • Acyclic radicals **[2, 2006.01]**

7/027 • • Keto-aldonic acids **[4, 2006.01]**

7/033 • • Uronic acids **[4, 2006.01]**

7/04 • Carbocyclic radicals **[2, 2006.01]**

7/06 • Heterocyclic radicals **[2, 2006.01]**

9/00 Compounds containing a hetero ring sharing at least two hetero atoms with a saccharide radical [2, 2006.01]

9/02 • the hetero ring containing only oxygen as ring hetero atoms **[2, 2006.01]**

9/04 • • Cyclic acetals **[2, 2006.01]**

9/06 • the hetero ring containing nitrogen as ring hetero atoms **[2, 2006.01]**

11/00 Compounds containing saccharide radicals esterified by inorganic acids; Metal salts thereof (halo-sugars C07H 5/02; thio-, seleno-, or telluro-sugars C07H 5/08) **[2, 2006.01]**

11/02 • Nitrates; Nitrites **[2, 2006.01]**

11/04 • Phosphates; Phosphites; Polyphosphates **[2, 2006.01]**

13/00 Compounds containing saccharide radicals esterified by carbonic acid or derivatives thereof, or by organic acids, e.g. phosphonic acids [2, 2006.01]

13/02 • by carboxylic acids **[2, 2006.01]**

13/04 • • having the esterifying carboxyl radicals attached to acyclic carbon atoms **[2, 2006.01]**

13/06 • • • Fatty acids **[2, 2006.01]**

13/08 • • having the esterifying carboxyl radicals directly attached to carbocyclic rings **[2, 2006.01]**

13/10 • • having the esterifying carboxyl radicals directly attached to heterocyclic rings **[2, 2006.01]**

13/12 • by acids having the group —X—C (=X)—X—, or halides thereof, in which X means nitrogen, oxygen, sulfur, selenium, or tellurium, e.g. carbonic acid, carbamic acid **[2, 2006.01]**

15/00 Compounds containing hydrocarbon or substituted hydrocarbon radicals directly attached to hetero atoms of saccharide radicals [2, 2006.01]

Note(s) [4]

In this group, acyl radicals directly attached to hetero atoms of the saccharide radicals are not considered as substituted hydrocarbon radicals.

15/02 • Acyclic radicals, not substituted by cyclic structures **[2, 2006.01]**

15/04 • • attached to an oxygen atom of a saccharide radical **[2, 2006.01]**

15/06 • • • being a hydroxyalkyl group esterified by a fatty acid **[4, 2006.01]**

15/08 • • • Polyoxyalkylene derivatives **[2, 2006.01]**

15/10 • • • containing unsaturated carbon-to-carbon bonds **[2, 2006.01]**

15/12 • • attached to a nitrogen atom of a saccharide radical **[2, 2006.01]**

15/14 • • attached to a sulfur, selenium or tellurium atom of a saccharide radical **[2, 2006.01]**

15/16 • • • Lincomycin; Derivatives thereof **[2, 2006.01]**

15/18 • Acyclic radicals, substituted by carbocyclic rings **[2, 2006.01]**

15/20 • Carbocyclic rings **[2, 2006.01]**

15/203 • • Monocyclic carbocyclic rings other than cyclohexane rings; Bicyclic carbocyclic ring systems **[4, 2006.01]**

15/207 • • Cyclohexane rings not substituted by nitrogen atoms, e.g. kasugamycins **[4, 2006.01]**

15/22 • • Cyclohexane rings, substituted by nitrogen atoms **[4, 2006.01]**

15/222 • • • Cyclohexane rings, substituted by at least two nitrogen atoms **[4, 2006.01]**

15/224 • • • • with only one saccharide radical directly attached to the cyclohexane rings, e.g. destomycin, fortimicin, neamine **[4, 2006.01]**

15/226 • • • • with at least two saccharide radicals directly attached to the cyclohexane rings **[4, 2006.01]**

15/228 • • • • • attached to adjacent ring-carbon atoms of the cyclohexane rings **[4, 2006.01]**
15/23 • • • • • • with only two saccharide radicals in the molecule, e.g. ambutyrosin, butyrosin, xylostatin, ribostamycin **[4, 2006.01]**
15/232 • • • • • • with at least three saccharide radicals in the molecule, e.g. lividomycin, neomycin, paromomycin **[4, 2006.01]**
15/234 • • • • • attached to non-adjacent ring carbon atoms of the cyclohexane rings, e.g. kanamycins, tobramycin, nebramycin, gentamicin A_2 **[4, 2006.01]**
15/236 • • • • • • a saccharide radical being substituted by an alkylamino radical in position 3 and by two substituents different from hydrogen in position 4, e.g. gentamicin complex, sisomicin, verdamicin **[4, 2006.01]**
15/238 • • • Cyclohexane rings substituted by two guanidine radicals, e.g. streptomycins **[4, 2006.01]**
15/24 • • Condensed ring systems having three or more rings **[2, 2006.01]**
15/244 • • • Anthraquinone radicals, e.g. sennosides **[4, 2006.01]**
15/248 • • • Colchicine radicals, e.g. colchicosides **[4, 2006.01]**
15/252 • • • Naphthacene radicals, e.g. daunomycins, adriamycins **[4, 2006.01]**
15/256 • • • Polyterpene radicals **[4, 2006.01]**
15/26 • Acyclic or carbocyclic radicals, substituted by hetero rings **[2, 2006.01]**

17/00 Compounds containing heterocyclic radicals directly attached to hetero atoms of saccharide radicals [2, 2006.01]
17/02 • Heterocyclic radicals containing only nitrogen as ring hetero atoms **[2, 2006.01]**
17/04 • Heterocyclic radicals containing only oxygen as ring hetero atoms **[2, 2006.01]**
17/06 • • Benzopyran radicals **[4, 2006.01]**
17/065 • • • Benzo[b]pyrans **[4, 2006.01]**
17/07 • • • • Benzo[b]pyran-4-ones **[4, 2006.01]**
17/075 • • • • Benzo[b]pyran-2-ones **[4, 2006.01]**
17/08 • • Hetero rings containing eight or more ring members, e.g. erythromycins **[2, 2006.01]**

19/00 Compounds containing a hetero ring sharing one ring hetero atom with a saccharide radical; Nucleosides; Mononucleotides; Anhydro derivatives thereof [2, 4, 2006.01]
19/01 • sharing oxygen **[4, 2006.01]**
19/02 • sharing nitrogen **[2, 2006.01]**
19/04 • • Heterocyclic radicals containing only nitrogen as ring hetero atom **[2, 2006.01]**
19/044 • • • Pyrrole radicals **[4, 2006.01]**
19/048 • • • Pyridine radicals **[4, 2006.01]**
19/052 • • • Imidazole radicals **[4, 2006.01]**
19/056 • • • Triazole or tetrazole radicals **[4, 2006.01]**
19/06 • • • Pyrimidine radicals **[2, 2006.01]**
19/067 • • • • with ribosyl as the saccharide radical **[4, 2006.01]**
19/073 • • • • with 2-deoxyribosyl as the saccharide radical **[4, 2006.01]**
19/09 • • • • with arabinosyl as the saccharide radical **[4, 2006.01]**
19/10 • • • • with the saccharide radical being esterified by phosphoric or polyphosphoric acids **[2, 2006.01]**
19/11 • • • • • containing cyclic phosphate **[4, 2006.01]**
19/12 • • • Triazine radicals **[2, 2006.01]**
19/14 • • • Pyrrolo-pyrimidine radicals **[2, 2006.01]**
19/16 • • • Purine radicals **[2, 2006.01]**
19/167 • • • • with ribosyl as the saccharide radical **[4, 2006.01]**
19/173 • • • • with 2-deoxyribosyl as the saccharide radical **[4, 2006.01]**
19/19 • • • • with arabinosyl as the saccharide radical **[4, 2006.01]**
19/20 • • • • with the saccharide radical being esterified by phosphoric or polyphosphoric acids **[2, 2006.01]**
19/207 • • • • • the phosphoric or polyphosphoric acids being esterified by a further hydroxylic compound, e.g. flavine-adenine dinucleotide or nicotinamide-adenine dinucleotide **[4, 2006.01]**
19/213 • • • • • containing cyclic phosphate **[4, 2006.01]**
19/22 • • • Pteridine radicals **[2, 2006.01]**
19/23 • • • Heterocyclic radicals containing two or more heterocyclic rings condensed among themselves or condensed with a common carbocyclic ring system, not provided for in groups C07H 19/14-C07H 19/22 **[4, 2006.01]**
19/24 • • Heterocyclic radicals containing oxygen or sulfur as ring hetero atom **[2, 2006.01]**

21/00 Compounds containing two or more mononucleotide units having separate phosphate or polyphosphate groups linked by saccharide radicals of nucleoside groups, e.g. nucleic acids [2, 2006.01]
21/02 • with ribosyl as saccharide radical **[2, 2006.01]**
21/04 • with deoxyribosyl as saccharide radical **[2, 2006.01]**

23/00 Compounds containing boron, silicon, or a metal, e.g. chelates, vitamin B_{12} (esters with inorganic acids C07H 11/00; metal salts, see parent compounds) **[2, 2006.01]**

99/00 Subject matter not provided for in other groups of this subclass [2006.01]