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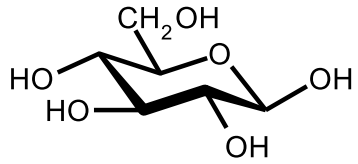
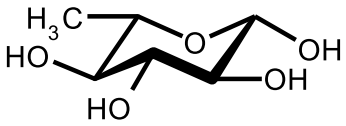
α (alpha), β (beta)

Stereodescriptors, used in a number of different ways.

1. Relative stereodescriptors used in carbohydrate nomenclature to describe the configuration at the anomeric carbon by relating it to the anomeric reference atom. For simple cases the anomeric reference atom is the same as the configurational reference atom. Thus in α-D-glucopyranose the reference atom is C-5 and the OH at C-1 is on the same side as the OH at C-5 in the Fischer projection.

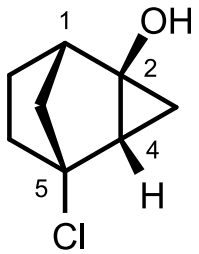


β-D-glucose



β-L-rhamnose

2. Relative stereodescriptors used by Chemical Abstracts Service to describe the configuration of a cyclic molecule (including suitable polycyclic systems) with several stereogenic centres whereby the α side of the reference plane is the side on which the substituent with CIP priority lies at the lowest numbered stereogenic centre. The other side is β.



tricyclo[3.2.1.$0^{2,4}$]octan-2-ol, 5-chloro, (1α,2α,4α,5β)-

3. Absolute stereodescriptors originally devised for steroid nomenclature. However in this sense it is only meaningful if there is an agreed absolute configuration and orientation of the structure so as to define the plane and which way up the molecule is represented. Substituents above the plane of the steroid are described as β and are shown as a solid line (or); those below the plane are described as α and are shown by a broken line (or). The extension of this system to tetrapyrroles has been documented and it has been widely used elsewhere.

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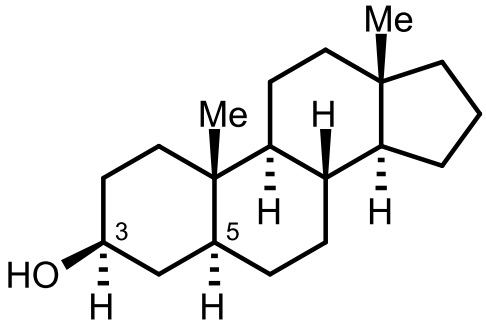

5α-androstan-3β-ol

Source:
PAC, 1996, *68*, 2193 *(Basic terminology of stereochemistry (IUPAC Recommendations 1996))* on page 2197

See also:
PAC, 1989, *61*, 1783 *(Nomenclature of steroids (Recommendations 1989))* on page 1783
PAC, 1987, *59*, 779 *(Nomenclature of tetrapyrroles (Recommendations 1986))* on page 779

