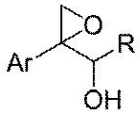
The invention claimed is:

1. A process for producing a compound represented by formula (II)

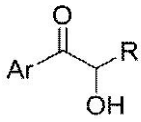


(II)

wherein Ar represents a phenyl group optionally substituted by 1 to 3 substituents selected from the group consisting of a halogen atom and a trifluoromethyl group, and R represents a hydrogen atom or an alkyl group having 1 to 12 carbon atoms, the process comprising:

a step A of reacting trimethyl oxosulfonium salt or trimethyl sulfonium salt with a base in a solvent, and removing the resulting solid to obtain a trimethyl oxosulfonium ylide solution or a trimethyl sulfonium ylide solution; and

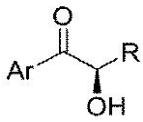
a step B of reacting a compound represented by formula (I)



(I)

wherein Ar and R are as defined above, with the trimethyl oxosulfonium ylide solution or trimethyl sulfonium ylide solution obtained in the step A to obtain the compound represented by formula (II).

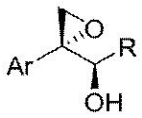
2. The process according to claim 1, wherein the compound represented by formula (I) is a compound represented by formula (Ia)



(Ia)

wherein Ar represents a phenyl group optionally substituted by 1 to 3 substituents selected from the group consisting of a halogen atom and a trifluoromethyl group, and R represents a hydrogen atom or an alkyl group having 1 to 12 carbon atoms, and

the compound represented by formula (II) is a compound represented by formula (IIa)

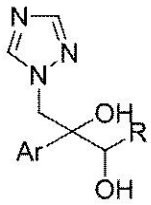


(IIa)

wherein Ar and R are as defined above.

3. The process according to claim 1, further comprising:

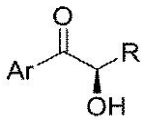
a step C of reacting the compound represented by formula (II) with 1,2,4-triazole in the presence of a base to obtain a compound represented by formula (III) or a salt thereof



(III)

wherein Ar and R are as defined in claim 1.

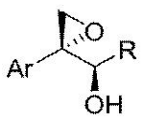
4. The process according to claim 3, wherein the compound represented by formula (I) is a compound represented by formula (Ia)



(Ia)

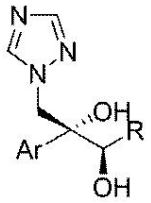
wherein Ar represents a phenyl group optionally substituted by 1 to 3 substituents selected from the group consisting of a halogen atom and a trifluoromethyl group, and R represents a hydrogen atom or an alkyl group having 1 to 12 carbon atoms,

the compound represented by formula (II) is a compound represented by formula (IIa)



(IIa)

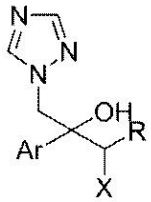
wherein Ar and R are as defined above, and the compound represented by formula (III) is a compound represented by formula (IIIa)



(IIIa)

wherein Ar and R are as defined above.

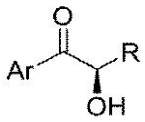
5. The process according to claim 3, further comprising: a step D of converting a primary or secondary hydroxyl group of the compound represented by formula (III) or a salt thereof into a leaving group to obtain a compound represented by formula (IV) or a salt thereof



(IV)

wherein X is a leaving group, and Ar and R are as defined in claim 3.

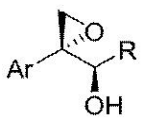
6. The process according to claim 5, wherein the compound represented by formula (I) is a compound represented by formula (Ia)



(Ia)

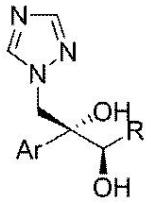
wherein Ar represents a phenyl group optionally substituted by 1 to 3 substituents selected from the group consisting of a halogen atom and a trifluoromethyl group, and R represents a hydrogen atom or an alkyl group having 1 to 12 carbon atoms,

the compound represented by formula (II) is a compound represented by formula (IIa)



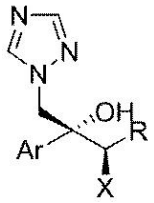
(IIa)

wherein Ar and R are as defined above, the compound represented by formula (III) is a compound represented by formula (IIIa)



(IIIa)

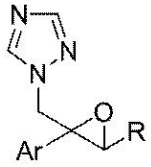
wherein Ar and R are as defined above, and the compound represented by formula (IV) is a compound represented by formula (IVa)



(IVa)

wherein X represents a leaving group, and Ar and R are as defined above.

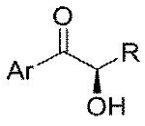
7. The process according to claim 5, further comprising: a step E of reacting the compound represented by formula (IV) or a salt thereof with a base to obtain a compound represented by formula (V) or a salt thereof



(V)

wherein Ar and R are as defined in claim 5.

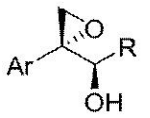
8. The process according to claim 7, wherein the compound represented by formula (I) is a compound represented by formula (Ia)



(Ia)

wherein Ar represents a phenyl group optionally substituted by 1 to 3 substituents selected from the group consisting of a halogen atom and a trifluoromethyl group, and R represents a hydrogen atom or an alkyl group having 1 to 12 carbon atoms,

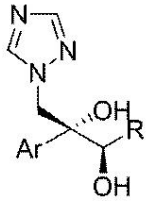
the compound represented by formula (II) is a compound represented by formula (IIa)



(IIa)

wherein Ar and R are as defined above,

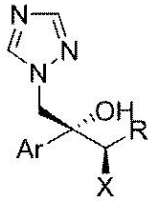
the compound represented by formula (III) is a compound represented by formula (IIIa)



(IIIa)

wherein Ar and R are as defined above,

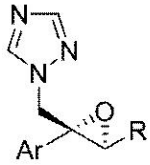
the compound represented by formula (IV) is a compound represented by formula (IVa)



(IVa)

wherein X represents a leaving group, and Ar and R are as defined above, and

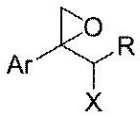
the compound represented by formula (V) is a compound represented by formula (Va)



(Va)

wherein Ar and R are as defined above.

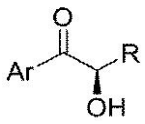
9. The process according to claim 1, further comprising: a step F of converting a hydroxyl group of the compound represented by formula (II) into a leaving group to obtain a compound represented by formula (VI)



(VI)

wherein X represents a leaving group, and Ar and R are as defined in claim 1.

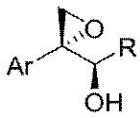
10. The process according to claim 9, wherein the compound represented by formula (I) is a compound represented by formula (Ia)



(Ia)

wherein Ar represents a phenyl group optionally substituted by 1 to 3 substituents selected from the group consisting of a halogen atom and a trifluoromethyl group, and R represents a hydrogen atom or an alkyl group having 1 to 12 carbon atoms,

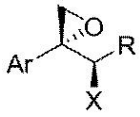
the compound represented by formula (II) is a compound represented by formula (IIa)



(IIa)

wherein Ar and R are as defined above, and

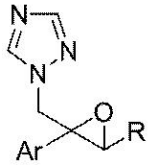
the compound represented by formula (VI) is a compound represented by formula (VIa)



(VIa)

wherein X represents a leaving group, and Ar and R are as defined above.

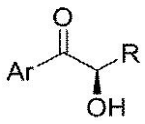
11. The process according to claim 9, further comprising: a step G of reacting the compound represented by formula (VI) with 1,2,4-triazole in the presence of a base to obtain a compound represented by formula (V) or a salt thereof



(V)

wherein Ar and R are as defined in claim 9.

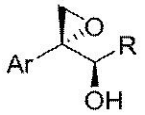
12. The process according to claim 11, wherein the compound represented by formula (I) is a compound represented by formula (Ia)



(Ia)

wherein Ar represents a phenyl group optionally substituted by 1 to 3 substituents selected from the group consisting of a halogen atom and a trifluoromethyl group, and R represents a hydrogen atom or an alkyl group having 1 to 12 carbon atoms,

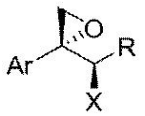
the compound represented by formula (II) is a compound represented by formula (IIa)



(IIa)

wherein Ar and R are as defined above,

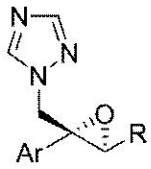
the compound represented by formula (VI) is a compound represented by formula (VIa)



(VIa)

wherein X represents a leaving group, and Ar and R are as defined above, and

the compound represented by formula (V) is a compound represented by formula (Va)



(Va)

wherein Ar and R are as defined above.

13. The process according to claim 1, wherein Ar is a 2,4-difluorophenyl group or a 2,5-difluorophenyl group.

14. The process according to claim 13, wherein R is a methyl group.

15. The process according to claim 14, wherein a solvent for reacting the trimethyl oxosulfonium salt or trimethyl sulfonium salt with the base in the step A is tetrahydrofuran, dimethylsulfoxide, toluene, or a mixed solvent thereof.