Claims

1. Method for preparing selenobiaryl ethers comprising the method steps of:

a) adding a first arene to the reaction mixture,

b) adding a second arene to the reaction mixture,

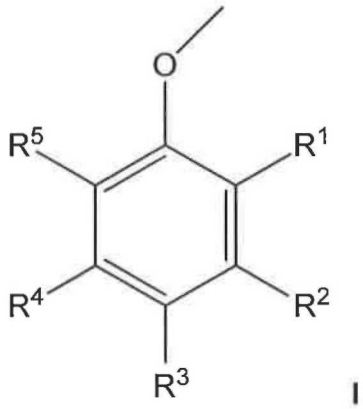
c) adding selenium dioxide to the reaction mixture,

d) adding an acid having a pKa in the range from 0 to 5 to the reaction mixture,

e) adjusting the reaction temperature of the reaction mixture such that the first arene and the second arene are converted to a selenobiaryl ether.

~~2. Method according to Claim 1,~~

wherein the first arene in method step a) is a compound of the general formula **I**:



I

wherein R^1, R^2, R^3, R^4, R^5 are each independently selected from:

-H, -(C_1-C_{12})-alkyl, -O-(C_1-C_{12})-alkyl, -(C_6-C_{20})-aryl, -O-(C_6-C_{20})-aryl, -halogen,

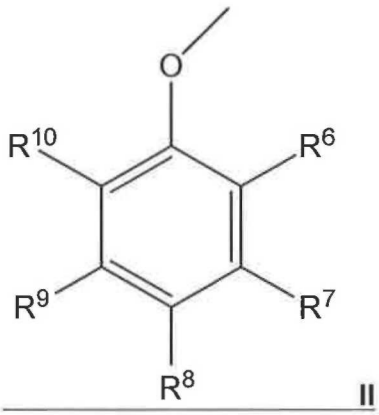
-OC=O-(C_1-C_{12})-alkyl,

two adjacent radicals may additionally be joined to one another to form a condensed system,

where the alkyl and aryl groups mentioned may be substituted,

and at least one of the R^1, R^2, R^3, R^4, R^5 radicals is -H, and

wherein the second arene in method step b) is a compound of the general formula **II**:



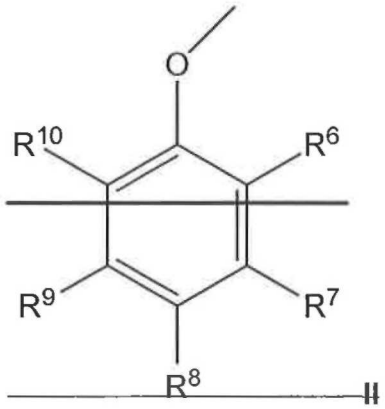
II

wherein R^6, R^7, R^8, R^9, R^{10} are each independently selected from:
-H, -(C_1-C_{12})-alkyl, -O-(C_1-C_{12})-alkyl, -(C_6-C_{20})-aryl, -O-(C_6-C_{20})-aryl, -halogen,
-OC=O-(C_1-C_{12})-alkyl,
two adjacent radicals may additionally be joined to one another to form a condensed system,
where the alkyl and aryl groups mentioned may be substituted,
and at least one of the R^6, R^7, R^8, R^9, R^{10} radicals is -H.

~~3~~2. Method according to Claim ~~2~~1,
wherein R^1, R^2, R^3, R^4, R^5 are each independently selected from:
-H, -(C_1-C_{12})-alkyl, -O-(C_1-C_{12})-alkyl, -(C_6-C_{20})-aryl, -O-(C_6-C_{20})-aryl,
where the alkyl and aryl groups mentioned may be substituted,
and at least one of the R^1, R^2, R^3, R^4, R^5 radicals is -H.

4~~3~~. Method according to either of Claims ~~2~~ 1 and ~~3~~2,
wherein R^1, R^2, R^3, R^4, R^5 are each independently selected from:
-H, -(C_1-C_{12})-alkyl, -O-(C_1-C_{12})-alkyl,
where the alkyl groups mentioned may be substituted,
and at least one of the R^1, R^2, R^3, R^4, R^5 radicals is -H.

~~5. Method according to any of Claims 1 to 4,~~
~~wherein the second arene in method step b) is a compound of the general formula II:~~



~~wherein R^6, R^7, R^8, R^9, R^{10} are each independently selected from:~~
~~-H, -(C_1-C_{12})-alkyl, -O-(C_1-C_{12})-alkyl, -(C_6-C_{20})-aryl, -O-(C_6-C_{20})-aryl, -halogen,~~
~~-OC=O-(C_1-C_{12})-alkyl,~~
~~two adjacent radicals may additionally be joined to one another to form a condensed system,~~
~~where the alkyl and aryl groups mentioned may be substituted,~~
~~and at least one of the R^6, R^7, R^8, R^9, R^{10} radicals is -H.~~

~~6~~4. Method according to Claim ~~5~~1,
wherein R^6, R^7, R^8, R^9, R^{10} are each independently selected from:
-H, -(C_1-C_{12})-alkyl, -O-(C_1-C_{12})-alkyl, -(C_6-C_{20})-aryl, -O-(C_6-C_{20})-aryl,
where the alkyl and aryl groups mentioned may be substituted,
and at least one of the R^6, R^7, R^8, R^9, R^{10} radicals is -H.

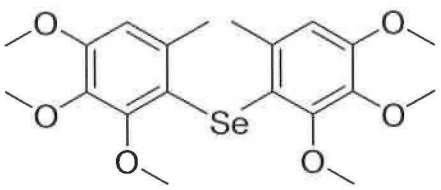
~~7~~5. Method according to either of Claims ~~5~~1 and ~~6~~4,
wherein R^6, R^7, R^8, R^9, R^{10} are each independently selected from:
-H, -(C_1-C_{12})-alkyl, -O-(C_1-C_{12})-alkyl,
where the alkyl and aryl groups mentioned may be substituted,
and at least one of the R^6, R^7, R^8, R^9, R^{10} radicals is -H.

~~8~~6. Method according to any of Claims 1 to ~~7~~5,
wherein the first arene corresponds to the second arene.

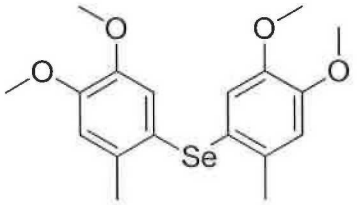
~~9~~7. Method according to any of Claims 1 to ~~8~~6,
wherein the selenium dioxide is added in method step c) in a molar ratio based on the sum total of the first and second arenes within a range from 0.25 to 1.5.

~~10~~8. Method according to any of Claims 1 to ~~9~~7, wherein the acid is acetic acid.

~~11~~9. Compound of the formula **1** or **2**:



1



2