

# 1    **Chemical Structures of Lignans and Neolignans** 2    **Isolated from Lauraceae**

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**Table SI-1.** Semi-systematic names and names in references of lignans and cyclolignans

| No. | Semi-systematic names                                                                                        | Names in references                                                                                                                            | Ref. |
|-----|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 5   | <i>meso</i> -3,4,5,3',4',5'-hexamethoxy lignan                                                               | <i>meso</i> -3,4,5,3',4',5'-hexamethoxy-8.8'-lignan                                                                                            | [6]  |
| 6   | <i>threo</i> -3,4,5,3',4',5'-hexamethoxy lignan                                                              | <i>threo</i> -3,4,5,3',4',5'-hexamethoxy-8.8'-lignan                                                                                           | [6]  |
| 12  | <i>threo</i> -4,9,4',9'-Tetrahydroxy-3,5,3',5'-tetramethoxy lignan                                           | 2,3-bis[(4-hydroxy-3,5-dimethoxy phenyl)-methyl]-1,4-butanediol                                                                                | [10] |
| 13  | (7 <i>R</i> ,8 <i>S</i> ,8' <i>R</i> )-7-hydroxy-3,4,3',4'-tetramethoxy lignan                               | (7 <i>R</i> ,8 <i>S</i> ,8' <i>R</i> )-7-hydroxy-3,4,3',4'-tetramethoxy-8.8'-neolignan                                                         | [11] |
| 14  | (8 <i>S</i> ,8' <i>R</i> )-4'-hydroxy-3'-methoxy-3,4-methylene dioxy lign-7-one                              | (8 <i>S</i> ,8' <i>R</i> )-4'-hydroxy-3'-methoxy-3,4-methylenedioxy-7-oxo-8.8'-neolignan                                                       | [11] |
| 15  | (8 <i>S</i> ,8' <i>R</i> )-3,4,3',4'-dimethylenedioxy lign-7-one                                             | (8 <i>S</i> ,8' <i>R</i> )-3,4,3',4'-dimethylenedioxy-7-oxo-8.8'-neolignan                                                                     | [11] |
| 16  | (8 <i>S</i> ,8' <i>R</i> )-3',4'-dimethoxy-3,4-methylenedioxy lign-7-one                                     | (8 <i>S</i> ,8' <i>R</i> )-3',4'-dimethoxy-3,4-methylenedioxy-7-oxo-8.8'-neolignan                                                             | [11] |
| 27  | <i>rel</i> -(7 <i>S</i> ,8 <i>S</i> ,7' <i>S</i> ,8' <i>R</i> )-7,7'-epoxy-2,5,3',4',5'-pentamethoxy lignane | 2-(2',5'-dimethoxy phenyl)-3,4-dimethyl-5-(3'', 4'', 5''-trimethoxy phenyl)-tetrahydrofuran                                                    | [14] |
| 28  | <i>rel</i> -(7 <i>S</i> ,8 <i>S</i> ,7' <i>S</i> ,8' <i>R</i> )-7,7'-epoxy-2,5,3',4'-tetramethoxy lignane    | 2-(2',5'-dimethoxy phenyl)-3,4-dimethyl-5-(3'', 4'', 5''-trimethoxy phenyl)-tetrahydrofuran                                                    | [14] |
| 43  | (7 <i>R</i> ,8 <i>R</i> ,7 <i>R</i> ',8' <i>R</i> )-2,9,2',9'-diepoxy-7,7'-dihydroxy-3,3'-dimethoxy lignan   | (3 <i>R</i> ,4 <i>R</i> ,3' <i>R</i> ,4' <i>R</i> ')-6,6'-dimethoxy-3,4,3',4'-tetrahydro-2 <i>H</i> ,2' <i>H</i> [3, 3']bichromenyl-4, 4'-diol | [24] |
| 65  | (8 <i>R</i> )-3,4-dimethoxy-3',4'-methylenedioxy-2.7',8.8'-cyclolign-7'-ene                                  | (8 <i>R</i> )-3,4-dimethoxy-3',4'-methylenedioxy- $\Delta^{7,8,7',8'}$ -6.7',8.8'-neolignan                                                    | [28] |
| 66  | 4-hydroxy-3-methoxy-3',4'-methylenedioxy-2.7',8.8'-cyclolign-7,7'-diene                                      | 4-hydroxy-3-methoxy-3',4'-methylenedioxy- $\Delta^{7,8,7',8'}$ -6.7',8.8'-neolignan                                                            | [28] |

**Table SI-2.** Semi-systematic names and names in references of 8,1'-neolignans

| No. | Semi-systematic name                                                                                                             | Name in reference                                                                                                                       | Ref.     |
|-----|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------|
| 72  | (7S,8S,1'R)-7,2'-epoxy-3,4,5'-trimethoxy-8,1'-neolign-8'-ene-4'(1'H)-one                                                         | (2S,3S,3aR)-3a-allyl-5-methoxy-3-methyl-2-veratryl-2,3,3a,6-tetrahydro-6-oxobenzofuran                                                  | [40]     |
| 73  | (7S,8S,1'R)-7,2'-epoxy-3,4,3',5'-tetramethoxy-8,1'-neolign-8'-ene-4'(1'H)-one                                                    | (2S,3S,3aR)-3a-allyl-5,7-dimethoxy-3-methyl-2-veratryl-2,3,3a,6-tetrahydro-6-oxobenzofuran                                              | [40]     |
| 74  | (7S,8S,1'R)-7,2'-Epoxy-3,4,5,5'-tetramethoxy-8,1'-neolign-8'-ene-4'(1'H)-one                                                     | (7S,8S,1'R)- $\Delta^{8'}$ -3,4,5,5'-tetramethoxy-1',4'-dihydro-4'-oxo-7.O.2',8.1'-neolignan                                            | [41]     |
| 76  | (7R,8S,1'S)-7,2'-epoxy-5'-methoxy-3,4-methylenedioxy-8,1'-neolign-8'-ene-4'(1'H)-one                                             | (2R,3S,3aS)-3a-allyl-5-methoxy-3-methyl-2-piperonyl-2,3,3a,6-tetrahydro-6-oxobenzofuran                                                 | [42, 43] |
| 77  | (7R,8S,1'S)-7,2'-epoxy-3',5'-dimethoxy-3,4-methylenedioxy-8,1'-neolign-8'-ene-4'(1'H)-one                                        | (7R,8S,1'S)- $\Delta^{8'}$ -3',5'-dimethoxy-3,4-methylenedioxy-1',4'-dihydro-4'-oxo-7.O.2',8.1'-neolignan                               | [44, 45] |
| 78  | <i>rel</i> -(7R,8S,1'S)-7,2'-epoxy-3,5'-dimethoxy-4,5-methylenedioxy-8,1'-neolign-8'-ene-4'(1'H)-one                             | <i>rel</i> -(2R,3S,3aS)-3a-allyl-5-methoxy-2-(3-methoxy-4,5-methylenedioxyphenyl)-3-methyl-2,3,3a,6-tetrahydro-6-oxobenzofuran          | [46, 47] |
| 79  | <i>rel</i> -(7R,8S,1'S)-7,2'-epoxy-3,4,5,5'-tetramethoxy-8,1'-neolign-8'-ene-4'(1'H)-one                                         | <i>rel</i> -(2R,3S,3aS)-3a-allyl-5-methoxy-2-(3,4,5-trimethoxyphenyl)-3-methyl-2,3,3a,6-tetrahydro-6-oxobenzofuran                      | [46, 47] |
| 80  | <i>rel</i> -(7S,8S,1'S)-7,2'-epoxy-3,4,5,5'-tetramethoxy-8,1'-neolign-8'-ene-4'(1'H)-one                                         | <i>rel</i> -(2S,3S,3aS)-3a-allyl-5-methoxy-2-(3,4,5-trimethoxyphenyl)-3-methyl-2,3,3a,6-tetrahydro-6-oxobenzofuran                      | [46, 47] |
| 85  | (7S,8R,1'S,5'S)-7,2'-epoxy-5',6'-dihydro-3,3',5'-trimethoxy-4,5-methylenedioxy-8,1'-neolign-8'-ene-4'(1'H)-one                   | (7S,8R,1'S,5'S)- $\Delta^{8'}$ -3,3',5'-trimethoxy-4,5-methylenedioxy-1',4',5',6'-tetrahydro-4'-oxo-7.O.2',8.1'-neolignan               | [50]     |
| 89  | <i>rel</i> -(7R,8R,1'R,5'R)-7,2'-epoxy-5',6'-dihydro-5'-methoxy-3,4-methylenedioxy-8,1'-neolign-8'-ene-4'(1'H)-one               | <i>rel</i> -(7R,8R,1'R,5'R)- $\Delta^{8'}$ -5'-methoxy-3,4-methylenedioxy-1',4',5',6'-tetrahydro-4'-oxo-7.O.2',8.1'-neolignan           | [57, 58] |
| 92  | (7R,8S,1'R,5'R)-7,2'-epoxy-5',6'-dihydro-3,4,3',5'-tetramethoxy-8,1'-neolign-8'-ene-4'(1'H)-one                                  | (7R,8S,1'R,3'R)- $\Delta^{5',8'}$ -3,4,3',5'-tetramethoxy-4'-oxo-8.1',7.O.6'-neolignan                                                  | [45]     |
| 93  | (7R,8S,1'R,5'R)-7,2'-epoxy-5',6'-dihydro-3',5'-dimethoxy-3,4-methylenedioxy-8,1'-neolign-8'-ene-4'(1'H)-one                      | (7R,8S,1'R,3'R)- $\Delta^{5',8'}$ -3',5'-dimethoxy-3,4-methylenedioxy-4'-oxo-8.1',7.O.6'-neolignan                                      | [45]     |
| 94  | <i>rel</i> -(7R,8S,1'R,5'S)-7,2'-epoxy-5',6'-dihydro-5'-methoxy-3,4-methylenedioxy-8,1'-neolign-8'-ene-4'(1'H)-one               | <i>rel</i> -(7R,8S,1'R,5'S)- $\Delta^{8'}$ -5'-methoxy-3,4-methylenedioxy-1',4',5',6'-tetrahydro-4'-oxo-7.O.2',8.1'-neolignan           | [57]     |
| 103 | <i>rel</i> -(7S,8S,1'S,2'S)-7,2'-epoxy-2',3'-dihydroxy-1',2',3',6'-tetrahydro-5'-methoxy-3,4-methylenedioxy-8,1'-neolign-8'-ene  | <i>rel</i> -(7S,8S,1'S,2'S)- $\Delta^{8'}$ -2',3'-dihydroxy-3,4-methylenedioxy-1',2',3',6'-tetrahydro-7.O.2',8.1'-neolignan             | [57]     |
| 104 | <i>rel</i> -(7S,8S,1'S,2'S)-7,2'-epoxy-3'-hydroxy-1',2',3',6'-tetrahydro-2'-methoxy-3,4-methylenedioxy-8,1'-neolign-8'-ene       | <i>rel</i> -(7S,8S,1'S,2'S)- $\Delta^{8'}$ -3'-hydroxy-2'-methoxy-3,4-methylenedioxy-1',2',3',6'-tetrahydro-7.O.2',8.1'-neolignan       | [57]     |
| 105 | <i>rel</i> -(7R,8S,1'R,2'S,4'R,5'R)-7,2'-epoxy-2',4'-dihydroxy-1',2',3',4',5',6'-hexahydro-3,4,5'-trimethoxy-8,1'-neolign-8'-ene | <i>rel</i> -(7R,8S,1'R,2'S,4'R,5'R)- $\Delta^{8'}$ -2',4'-dihydroxy-3,4,5'-trimethoxy-1',2',3',4',5',6'-hexahydro-7.O.2',8.1'-neolignan | [57]     |

|     |                                                                                                                                                                                                                         |                                                                                                                                                                                                    |      |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 106 | <i>rel</i> -(7 <i>R</i> ,8 <i>S</i> ,1' <i>R</i> ,2' <i>S</i> ,4' <i>S</i> ,5' <i>R</i> )-7,2'-epoxy-2',4'-<br>dihydroxy-1',2',3',4',5',6'-hexahydro-3,4,5'-<br>trimethoxy-8,1'-neolign-8'-ene                          | <i>rel</i> -(7 <i>R</i> ,8 <i>S</i> ,1' <i>R</i> ,2' <i>S</i> ,4' <i>S</i> ,5' <i>R</i> )- $\Delta^{8'}$ -2',4'-dihydroxy-3,4,5'-tri-<br>methoxy-1',2',3',4',5',6'-hexahydro-7.O.2',8.1'-neolignan | [57] |
| 107 | <i>rel</i> -(7 <i>R</i> ,8 <i>S</i> ,1' <i>R</i> ,2' <i>S</i> ,4' <i>R</i> ,5' <i>R</i> )-7,2'-epoxy-4'-hydroxy-<br>1',2',3',4',5',6'-hexahydro-3,4,2',5'-tetramethoxy-8,<br>1'-neolign-8'-ene                          | <i>rel</i> -(7 <i>R</i> ,8 <i>S</i> ,1' <i>R</i> ,3' <i>R</i> ,4' <i>R</i> ,6' <i>S</i> )- $\Delta^{8'}$ -4'-hydroxy-3,4,3',6'-<br>tetramethoxy-8.1',7.O.6'-neolignan                              | [59] |
| 108 | <i>rel</i> -(7 <i>R</i> ,8 <i>S</i> ,1' <i>R</i> ,2' <i>R</i> ,3' <i>S</i> ,4' <i>R</i> ,5' <i>R</i> )-7,2'-epoxy-2',3',4'-<br>trihydroxy-1',2',3',4',5',6'-hexahydro-3,4,5'-trimeth-<br>oxy-8,1'-neolign-8'-ene (108), | <i>rel</i> -(7 <i>R</i> ,8 <i>S</i> ,1' <i>R</i> ,3' <i>R</i> ,4' <i>R</i> ,5' <i>S</i> ,6' <i>R</i> )- $\Delta^{8'}$ -4',5',6'-trihydroxy-<br>3,4,3'-trimethoxy-8.1',7.O.6'-neolignan             | [59] |
| 109 | <i>rel</i> -(7 <i>R</i> ,8 <i>S</i> ,1' <i>R</i> ,2' <i>R</i> ,3' <i>S</i> ,4' <i>S</i> ,5' <i>R</i> )-7,2'-epoxy-2',3',4'-<br>trihydroxy-1',2',3',4',5',6'-hexahydro-3,4,5'-<br>trimethoxy-8,1'-neolign-8'-ene         | <i>rel</i> -(7 <i>R</i> ,8 <i>S</i> ,1' <i>R</i> ,3' <i>R</i> ,4' <i>S</i> ,5' <i>S</i> ,6' <i>R</i> )- $\Delta^{8'}$ -4',5',6'-trihydroxy-<br>3,4,3'-trimethoxy-8.1',7.O.6'-neolignan             | [59] |
| 110 | <i>rel</i> -(7 <i>R</i> ,8 <i>S</i> ,1' <i>R</i> ,2' <i>R</i> ,3' <i>R</i> ,4' <i>R</i> ,5' <i>R</i> )-7,2',3'.4'-diepoxy-1'-<br>,2',3',4',5',6'-hexahydro-2'-hydroxy-3,4,5'-trimetho-<br>xy-8,1'-neolign-8'-ene        | <i>rel</i> -(7 <i>R</i> ,8 <i>S</i> ,1' <i>R</i> ,3' <i>R</i> ,4' <i>R</i> ,5' <i>R</i> ,6' <i>R</i> )- $\Delta^{8'}$ -4',5'-epoxy-6'-<br>hydroxy-3,4,3'-trimethoxy-8.1',7.O.6'-neolignan          | [59] |
| 111 | <i>rel</i> -(7 <i>R</i> ,8 <i>S</i> ,1' <i>R</i> ,2' <i>S</i> ,5' <i>R</i> )-1',2',5',6'-tetrahydro-<br>3,4,2',5'-tetramethoxy-8,1'-neolign-8'-ene                                                                      | <i>rel</i> -(7 <i>R</i> ,8 <i>S</i> ,1' <i>R</i> ,3' <i>R</i> ,6' <i>S</i> )- $\Delta^{8'}$ -3,4,3',6'-tetramethoxy-8.1',<br>7.O.6'-neolignan                                                      | [59] |
| 112 | <i>rel</i> -(7 <i>R</i> ,8 <i>S</i> ,1' <i>R</i> ,5' <i>R</i> )-5',6'-dihydro-7-hydroxy-3,4,5'-<br>trimethoxy-8,1'-neolign-8'-ene-2'(1'H)-one                                                                           | <i>rel</i> -(7 <i>R</i> ,8 <i>S</i> ,1' <i>R</i> ,5' <i>R</i> )- $\Delta^{8'}$ -7-hydroxy-3,4,5'-trimethoxy-<br>1',2',5',6'-tetrahydro-2'-oxo-8,1'-neolign                                         | [57] |
| 113 | (8 <i>S</i> ,1' <i>R</i> ,5' <i>R</i> )-5',6'-dihydro-3,4,5'-trimethoxy-8,1'-<br>neolign-8'-ene-7,2'(1'H)-dione                                                                                                         | (8 <i>S</i> ,1' <i>R</i> ,5' <i>R</i> )- $\Delta^{3,8'}$ -3,4,5'-trimethoxy-<br>7,2'-dioxo-8.1'-neolignan                                                                                          | [58] |

**Table SI-3.** Semi-systematic names and names in references of 8,3'-neolignans

| No. | Semi-systematic names                                                                                      | Names in references                                                                                                | Ref. |
|-----|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|------|
| 130 | (7S,8S,1'S)-7,4'-epoxy-3,4,1'-trimethoxy-8,3'-neolign-8'-ene-6'(1'H)-one                                   | (2S,3S,5S)-5-allyl-5-methoxy-3-methyl-2-veratryl-2,3,5,6-tetrahydro-6-oxobenzofuran                                | [40] |
| 131 | (7S,8S,1'S)-7,4'-epoxy-1'-methoxy-3,4-methylenedioxy-8,3'-neolign-8'-ene-6'(1'H)-one                       | (2S,3S,5S)-5-allyl-5-methoxy-3-methyl-2-(3',4'-methylenedioxyphenyl)-2,3,5,6-tetrahydro-6-oxobenzofuran            | [62] |
| 135 | (7S,8S,1'R)-7,4'-epoxy-3,4,5,1'-tetramethoxy-8,3'-neolign-8'-ene-6'(1'H)-one                               | (2S,3S,5R)-5-allyl-5-methoxy-3-methyl-2-(3',4',5'-trimethoxyphenyl)-2,3,5,6-tetrahydro-6-oxobenzofuran             | [64] |
| 136 | (7S,8S,1'R)-7,4'-epoxy-1'-methoxy-3,4-methylenedioxy-8,3'-neolign-8'-ene-6'(1'H)-one                       | (7S,8S,1'R)- $\Delta^8$ -1'-methoxy-3,4-methylenedioxy-1',6'-dihydro-6'-oxo-7.O.4',8.3'-neolignan                  | [16] |
| 137 | (7S,8S,1'R)-7,4'-epoxy-1',5'-dimethoxy-3,4-methylenedioxy-8,3'-neolign-8'-ene-6'(1'H)-one                  | (7S,8S,1'R)- $\Delta^8$ -1',5'-dimethoxy-3,4-methylenedioxy-1',6'-dihydro-6'-oxo-7.O.4',8.3'-neolignan             | [16] |
| 138 | (7S,8S,1'R)-7,4'-Epoxy-3,1'-dimethoxy-4,5-methylenedioxy-8,3'-neolign-8'-ene-6'(1'H)-one                   | (7S,8S,1'R)- $\Delta^8$ -3,1'-dimethoxy-3,4-methylenedioxy-1',6'-dihydro-6'-oxo-7.O.4',8.3'-neolignan              | [25] |
| 139 | (7S,8S,1'R)-7,4'-epoxy-3,4,5,1',5'-pentamethoxy-8,3'-neolign-8'-ene-6'(1'H)-one                            | (2S,3S,5R)-5-allyl-5,7-dimethoxy-2-(3',4',5'-trimethoxyphenyl)-3-methyl-2,3,5,6-tetrahydro-6-oxobenzofuran         | [46] |
| 141 | (7R,8S,1'R)-7,4'-epoxy-3,5'-dimethoxy-4,5-methylenedioxy-8,3'-neolign-8'-ene-6'(1'H)-one                   | (2R,3S,5R)-5-allyl-5-methoxy-2-(3'-methoxy-4',5'-methylenedioxyphenyl)-3-methyl-2,3,5,6-tetrahydro-6-oxobenzofuran | [46] |
| 143 | (7S,8S)-7,2'-epoxy-4'-hydroxy-3,5'-dimethoxy-4,5-methylenedioxy-8,3'-neolign-8'-ene                        | (2S,3S)-7-allyl-6-hydroxy-5-methoxy-2-(3-methoxy-4,5-methylenedioxyphenyl)-3-methyl-2,3-dihydrobenzofuran          | [46] |
| 144 | (7R,8S)-7,2'-epoxy-6'-hydroxy-3,5'-dimethoxy-4,5-methylenedioxy-8,3'-neolign-8'-ene                        | (2R,3S)-7-allyl-6-hydroxy-5-methoxy-2-(3-methoxy-4,5-methylenedioxyphenyl)-3-methyl-2,3-dihydrobenzofuran          | [46] |
| 145 | 7,2'-epoxy-6'-hydroxy-3,5'-dimethoxy-3,4-methylenedioxy-8,3'-neolign-7,8'-diene                            | 7-allyl-6-hydroxy-5-methoxy-2-(3'-methoxy-4',5'-methylenedioxyphenyl)-3-methylbenzofuran                           | [46] |
| 146 | 7,2',-epoxy-6'-hydroxy-3,4,5,1'-tetramethoxy-8,3'-neolign-7,8'-diene                                       | 7-allyl-6-hydroxy-5-methoxy-2-(3',4',5'-trimethoxyphenyl)-3-methylbenzofuran                                       | [64] |
| 147 | 7,2'-epoxy-5'-hydroxy-3,4-dimethoxy-8,3'-neolign-7,8'-diene                                                | $\Delta^{7,8}$ -3'-hydroxy-3,4-dimethoxy-8.1',7.O.6'-7':1'→5'neolignan                                             | [59] |
| 148 | 7,2'-Epoxy-6'-hydroxy-5'-methoxy-3,4-methylenedioxy-8,3'-neolign-7,8'-diene                                | 7-allyl-6-hydroxy-5-methoxy-3-methyl-2-piperonylbenzofuran                                                         | [42] |
| 155 | (8S)-6-hydroxy-5'-methoxy-3,4-methylenedioxy-8,3'-neolign-8'-ene-7-one                                     | (8S)- $\Delta^8$ -4'-hydroxy-3'-methoxy-3,4-methylenedioxy-7-oxo-8.1',7':1'→5'-neolignan                           | [58] |
| 156 | <i>rel</i> -(8R,1'R,3'R)-2',3'-Dihydro-3,4,5-trimethoxy-3',4'-methylenedioxy-8,3'-neolign-7-ene-6'(1H)-one | $\Delta^8$ -3,4,5-trimethoxy-3',6'-dihydro-3',4'-methylenedioxy-6-oxo-8,3'-neolignan                               | [69] |
| 162 | <i>rel</i> -(7S,8S)-7,4'-epoxy-4-hydroxy-3,5'-dimethoxy-8',9'-bisnor-8,3'-neolign-7'-one                   | <i>rel</i> -(7S,8S)-4-hydroxy-3,3'-dimethoxy-7'-oxo-8,5',7.O.4-8',9'-bisnoeolignan                                 | [59] |

**Table SI-4.** Semi-systematic names and names in references of cycloneolignans

| No. | Semi-systematic names                                                                                                                                                                                               | Names in references                                                                                                                                                                                                   | Ref. |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 174 | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,2' <i>R</i> ,3' <i>S</i> )-1',2'-dihydro-2',5'-dihydroxy-3,3'-dimethoxy-4,5-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-4'(3'H)-one                              | <i>rel</i> -(1' <i>R</i> ,5' <i>S</i> ,6' <i>R</i> ,7 <i>S</i> ,8 <i>R</i> )- $\Delta^{2,8}$ -3',6'-dihydroxy-3,5'-dimethoxy-4,5-methylenedioxy-4'-oxo-8.1',7.5'-neolignan                                            | [75] |
| 175 | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,2' <i>R</i> ,3' <i>S</i> )-1',2'-dihydro-2'-hydroxy-3,3',5'-trimethoxy-4,5-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-4'(3'H)-one                               | <i>rel</i> -(1' <i>R</i> ,5' <i>S</i> ,6' <i>R</i> ,7 <i>S</i> ,8 <i>R</i> )- $\Delta^{2,8}$ -6'-hydroxy-3,3',5'-trimethoxy-4,5-methylenedioxy-4'-oxo-8.1',7.5'-neolignan                                             | [75] |
| 176 | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,2' <i>R</i> ,3' <i>S</i> )-2'-acetoxy-1',2'-dihydro-3,3',5'-tetramethoxy-4,5-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-4'(3'H)-one                             | <i>rel</i> -(1' <i>R</i> ,5' <i>S</i> ,6' <i>R</i> ,7 <i>S</i> ,8 <i>R</i> )- $\Delta^{2,8}$ -6'-acetoxy-3,3',5'-trimethoxy-4,5-methylenedioxy-4'-oxo-8.1',7.5'-neolignan                                             | [64] |
| 177 | <i>rel</i> -(7 <i>R</i> ,8 <i>R</i> ,1' <i>R</i> ,2' <i>R</i> ,3' <i>R</i> )-2'-acetoxy-1',2'-dihydro-5'-methoxy-3,4-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-4'(3'H)-one                                       | <i>rel</i> -(7 <i>R</i> ,8 <i>R</i> ,1' <i>R</i> ,5' <i>R</i> ,6' <i>R</i> )- $\Delta^{2,8}$ -6'-acetoxy-3'-methoxy-3,4-methylenedioxy-4'-oxo-8.1'-neolignan                                                          | [59] |
| 178 | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,3' <i>R</i> ,4' <i>S</i> )-4'-acetoxy-3',4'-dihydro-3,4,5,3',5'-pentamethoxy-7.3',8.1'-cycloneolign-8'-ene-2'(1'H)-one                                            | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,3' <i>R</i> ,4' <i>S</i> )- $\Delta^8$ -4'-acetoxy-3,4,5,3',5'-pentamethoxy-1',2',3',4'-tetrahydro-5'-oxo-7.3',8.1'-neolignan                                       | [76] |
| 179 | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,3' <i>R</i> ,4' <i>S</i> )-4'-acetoxy-3',4'-dihydro-4-hydroxy-3,3',5'-trimethoxy-7.3',8.1'-cycloneolign-8'-ene-2'(1'H)-one                                        | <i>rel</i> -(1' <i>R</i> ,4' <i>S</i> ,5' <i>R</i> ,7 <i>S</i> ,8 <i>R</i> )- $\Delta^{2,8}$ -4'-acetoxy-4-hydroxy-3,3',5'-trimethoxy-6'-oxo-8.1',7.5'-neolignan                                                      | [75] |
| 180 | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,3' <i>R</i> ,4' <i>S</i> )-4'-acetoxy-3',4'-dihydro-3,3',5'-trimethoxy-4,5-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-2'(1'H)-one                               | <i>rel</i> -(1' <i>R</i> ,4' <i>S</i> ,5' <i>R</i> ,7 <i>S</i> ,8 <i>R</i> )- $\Delta^{2,8}$ -4'-acetoxy-3,3',5'-trimethoxy-4,5-methylenedioxy-6'-oxo-8.1',7.5'-neolignan                                             | [75] |
| 181 | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,3' <i>R</i> ,4' <i>S</i> )-4'-acetoxy-3',4'-dihydro-4-hydroxy-3,5,3',5'-tetramethoxy-7.3',8.1'-cycloneolign-8'-ene-2'(1'H)-one                                    | <i>rel</i> -(1' <i>R</i> ,4' <i>S</i> ,5' <i>R</i> ,7 <i>S</i> ,8 <i>R</i> )- $\Delta^{2,8}$ -4'-acetoxy-4-hydroxy-3,5,3',5'-tetramethoxy-6'-oxo-8.1',7.5'-neolignan                                                  | [75] |
| 182 | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,2' <i>R</i> ,3' <i>S</i> ,4' <i>S</i> )-4'-acetoxy-1',2',3',4'-tetrahydro-2'-hydroxy-3',5'-dimethoxy-3,4-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene             | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,2' <i>R</i> ,3' <i>S</i> ,4' <i>S</i> )- $\Delta^8$ -4'-acetoxy-2'-hydroxy-3',5'-dimethoxy-3,4-methylenedioxy-1',2',3',4'-tetrahydro-7.3',8.1'-neolignan            | [76] |
| 183 | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,2' <i>R</i> ,3' <i>S</i> ,4' <i>S</i> )-4'-acetoxy-1',2',3',4'-tetrahydro-2'-hydroxy-3,3',5'-trimethoxy-4,5-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene          | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,2' <i>R</i> ,3' <i>S</i> ,4' <i>S</i> )- $\Delta^8$ -4'-acetoxy-2'-hydroxy-3,3',5'-trimethoxy-3,4-methylenedioxy-1',2',3',4'-tetrahydro-7.3',8.1'-neolignan         | [76] |
| 184 | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>S</i> ,2' <i>R</i> ,3' <i>S</i> ,4' <i>R</i> )-4'-acetoxy-1',2',3',4'-tetrahydro-2'-hydroxy-3'-methoxy-3,4-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-5'(6'H)-one      | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>S</i> ,2' <i>R</i> ,3' <i>S</i> ,4' <i>R</i> )- $\Delta^8$ -4'-acetoxy-2'-hydroxy-3'-methoxy-3,4-methylenedioxy-1',2',3',4',5',6'-hexahydro-5'-oxo-7.3',8.1'-neolignan     | [46] |
| 185 | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,2' <i>R</i> ,3' <i>S</i> ,4' <i>R</i> )-4'-acetoxy-1',2',3',4'-tetrahydro-2'-hydroxy-3',3'-dimethoxy-4,5-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-5'(6'H)-one | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>S</i> ,2' <i>R</i> ,3' <i>S</i> ,4' <i>R</i> )- $\Delta^8$ -4'-acetoxy-2'-hydroxy-3,3'-dimethoxy-3,4-methylenedioxy-1',2',3',4',5',6'-hexahydro-5'-oxo-7.3',8.1'-neolignan | [46] |
| 186 | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>S</i> ,3' <i>S</i> ,4' <i>S</i> )-4'-acetoxy-3',4'-dihydro-4-hydroxy-3,3',5'-trimethoxy-7.3',8.1'-cycloneolign-8'-ene-2'(1'H)-one                                        | <i>rel</i> -(1' <i>R</i> ,4' <i>R</i> ,5' <i>R</i> ,7 <i>R</i> ,8 <i>S</i> )- $\Delta^{2,8}$ -4'-acetoxy-4-hydroxy-3,3',5'-trimethoxy-6'-oxo-8.1',7.5'-neolignan                                                      | [75] |
| 187 | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>S</i> ,3' <i>S</i> ,4' <i>S</i> )-4'-acetoxy-3',4'-dihydro-3,4,3',5'-tetramethoxy-7.3',8.1'-cycloneolign-8'-ene-2'(1'H)-one                                              | <i>rel</i> -(1' <i>R</i> ,4' <i>R</i> ,5' <i>R</i> ,7 <i>R</i> ,8 <i>S</i> )- $\Delta^{2,8}$ -4'-acetoxy-3,4,3',5'-tetramethoxy-6'-oxo-8.1',7.5'-neolignan                                                            | [75] |

|     |                                                                                                                                                |                                                                                                                                     |      |
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| 188 | (7S,8R,1'S,3'S,4'S)-3',4'-dihydro-4,4'-dihydroxy-3,3',5'-trimethoxy-7.3',8.1'-cycloneolign-8'-ene-2'(1'H)-one                                  | (7S,8R,1'S,3'S,4'S)- $\Delta^8$ -4,4'-dihydroxy-3,3',5'-trimethoxy-1',2',3',4'-tetrahydro-2'-oxo-7.3',8.1'-neolignan                | [16] |
| 189 | <i>rel</i> -(7S,8R,1'S,3'S,4'S)-3',4'-dihydro-4'-hydroxy-3,3',5'-trimethoxy-4,5-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-2'(1'H)-one       | <i>rel</i> -(7S,8R,1'S,4'R,5'R)-4'-hydroxy-3,3',5'-trimethoxy-4,5-methylenedioxy-6'-oxo- $\Delta$ -1,3,5,2',8'-8.1',7.5'-neolignan  | [78] |
| 190 | <i>rel</i> -(7R,8R,1'S,3'R,4'R)-3',4'-dihydro-4'-hydroxy-5'-methoxy-3,4-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-2'(1'H)-one               | <i>rel</i> -(7S,8S,1'R,4'S,5'S)- $\Delta^{2,8'}$ -4'-hydroxy-3'-methoxy-3,4-methylenedioxy-6'-oxo-8.1',7.5'-neolignan               | [59] |
| 191 | <i>rel</i> -(7R,8R,1'R,3'R)-4-hydroxy-3,5'-dimethoxy-7.3',8.1'-cycloneolign-8'-ene-2',4'(1'H,3'H)-dione                                        | (1R,5R,6R,7R)-1-allyl-6-(4'-hydroxy-3'-methoxyphenyl)-3-methoxy-7-methyl-4,8-dioxobicyclo[3,2,1]oct-2-ene                           | [62] |
| 192 | (7R,8R,1'S,2'R,3'S)-2'-hydroxy-5'-methoxy-3,4-methylenedioxy-1',2'-dihydro-7.3',8.1'-cycloneolign-8'-ene-4(3'H)-one                            | (7R,8R,1'S,2'R,3'S)- $\Delta^{5',8'}$ -2'-hydroxy-6'-methoxy-3,4-methylenedioxy-4'-oxo-7.3',8.1'-neolignan                          | [58] |
| 193 | <i>rel</i> -(7S,8R,1'S,2'S,3'R)-2'-acetoxy-1',2'-dihydro-5'-hydroxy-3'-methoxy-3,4-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-4'(3'H)-one    | <i>rel</i> -(1S,5S,6S,7R,8R)-8-acetoxy-1-allyl-3-hydroxy-5-methoxy-7-methyl-4-oxo-6-piperonylbicyclo[3,2,1]oct-2-ene                | [40] |
| 194 | <i>rel</i> -(7S,8R,1'S,2'S,3'R)-2'-acetoxy-1',2'-dihydro-3',5'-dimethoxy-3,4-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-4'(3'H)-one          | <i>rel</i> -(1S,5S,6S,7R,8R)-8-acetoxy-1-allyl-3,5-dimethoxy-7-methyl-4-oxo-6-piperonylbicyclo[3,2,1]oct-2-ene                      | [40] |
| 195 | <i>rel</i> -(7S,8R,1'S,2'S,3'R)-1',2'-dihydro-2'-hydroxy-3',5'-dimethoxy-3,4-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-4'(3'H)-one          | <i>rel</i> -(1S,5S,6S,7R,8R)-1-allyl-8-hydroxy-3,5-dimethoxy-7-methyl-4-oxo-6-piperonylbicyclo[3,2,1]oct-2-ene                      | [40] |
| 196 | <i>rel</i> -(7S,8R,1'S,2'S,3'R)-2'-acetoxy-1',2'-dihydro-3,4,3',5'-tetramethoxy-7.3',8.1'-cycloneolign-8'-ene-4'(3'H)-one                      | (7S,8R,1'S,2'S,3'R)- $\Delta^8$ -2'-acetoxy-3',5',3,4-tetramethoxy-1',2',3',4'-tetrahydro-4'-oxo-7.3',8.1'-neolignan                | [65] |
| 197 | <i>rel</i> -(7S,8R,1'S,2'S,3'R)-2'-acetoxy-1',2'-dihydro-3,4,5,3',5'-pentamethoxy-7.3',8.1'-cycloneolign-8'-ene-4'(3'H)-one                    | (7S,8R,1'S,2'S,3'R)- $\Delta^8$ -2'-acetoxy-3',5',3,4,5-pentamethoxy-1',2',3',4'-tetrahydro-4'-oxo-7.3',8.1'-neolignan              | [65] |
| 198 | <i>rel</i> -(7S,8R,1'S,2'S,3'R)-2'-acetoxy-1',2'-dihydro-3,3',5'-trimethoxy-4,5-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-4'(3'H)-one       | (7S,8R,1'S,2'S,3'R)- $\Delta^8$ -2'-acetoxy-3',5',3-trimethoxy-4,5-methylenedioxy-1',2',3',4'-tetrahydro-4'-oxo-7.3',8.1'-neolignan | [65] |
| 200 | (7S,8R,1'S,2'S,3'R)-1',2'-dihydro-2',5'-dihydroxy-3'-methoxy-3,4-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-4'(3'H)-one                      | (7S,8R,1'S,5R,6'S)- $\Delta^{2,8'}$ -3',6'-dihydroxy-5'-methoxy-3,4-methylenedioxy-4'-oxo-8.1',7.5'-neolignan                       | [45] |
| 201 | (7S,8R,1'S,2'S,3'R)-2'-acetoxy-1',2'-dihydro-3,3',5'-trimethoxy-4,5-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-4'(3'H)-one                   | (7S,8R,1'R,2'R,3'S)- $\Delta^8$ -2'-acetoxy-3,3',5'-trimethoxy-4,5-methylenedioxy-1',2',3',4'-tetrahydro-4'-oxo-7.3',8.1'-neolignan | [25] |
| 202 | <i>rel</i> -(7S,8R,1'S,2'R,3'S)-2'-acetoxy-1',2',5',6'-tetrahydro-3',5'-dimethoxy-3,4-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-4'(3'H)-one | (7S,8R,1'R,2'R,3'S)- $\Delta^8$ -2'-acetoxy-3',5'-dimethoxy-3,4-methylenedioxy-1',2',3',4'-tetrahydro-4'-oxo-7.3',8.1'-neolignan    | [65] |
| 203 | <i>rel</i> -(7S,8R,1'S,2'R,3'S)-1',2',5',6'-tetrahydro-2'-hydroxy-3',5'-dimethoxy-3,4-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-4'(3'H)-one | (7S,8R,1'R,2'R,3'S)- $\Delta^8$ -3',5'-dimethoxy-2'-hydroxy-3,4-methylenedioxy-1',2',3',4'-tetrahydro-4'-oxo-7.3',8.1'-neolignan    | [65] |

|     |                                                                                                                                                       |                                                                                                                                               |      |
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| 204 | <i>rel</i> -(7S,8R,1'S,2'R,3'S)-2'-acetoxy-1',2',5',6'-<br>tetrahydro-3,4,3',5'-tetramethoxy-7.3',8.1'-<br>cycloneolign-8'-ene-4'(3'H)-one            | (7S,8R,1'R,2'R,3'S)- $\Delta^8$ -2'-acetoxy-3',5',3,4-tetramethoxy-1',2',3',4'-tetrahydro-4'-oxo-7.3',8.1'-neolignan                          | [65] |
| 205 | <i>rel</i> -(7S,8R,1'S,2'R,3'S)-1',2',5',6'-tetrahydro-4,2'-<br>dihydroxy-3,3',5'-trimethoxy-7.3',8.1'-cycloneolign-8'-<br>ene-4'(3'H)-one            | (7S,8R,1'R,2'R,3'S)- $\Delta^8$ -2',4-dihydroxy-3,3',5'-trimethoxy-1',2',3',4'-tetrahydro-4'-oxo-7.3',8.1'-neolignan                          | [65] |
| 206 | <i>rel</i> -(7S,8R,1'S,2'S,3'R,4'R)-2'-acetoxy-1',2',3',4'-<br>tetrahydro-4'-hydroxy-3',5'-dimethoxy-3,4-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene | (7S,8R,1'S,2'S,3'R,4'S)- $\Delta^8$ -2'-acetoxy-3',5'-dimethoxy-4'-hydroxy-3,4-methylenedioxy-1',2',3',4'-tetrahydro-7.3',8.1'-neolignan      | [65] |
| 207 | <i>rel</i> -(7S,8R,1'S,2'S,3'R,4'R)-2'-acetoxy-1',2',3',4'-<br>tetrahydro-4'-hydroxy-3,4,3',5'-tetramethoxy-7.3',8.1'-cycloneolign-8'-ene             | (7S,8R,1'S,2'S,3'R,4'S)- $\Delta^8$ -2'-acetoxy-3,4,3',5'-tetramethoxy-4'-hydroxy-1',2',3',4'-tetrahydro-7.3',8.1'-neolignan                  | [65] |
| 208 | (7S,8R,1'S,2'S,3'R,4'R)-1',2',3',4'-tetrahydro-2',4'-<br>dihydroxy-3',5'-dimethoxy-3,4-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene                   | (7S,8R,1'S,2'S,3'R,4'R)- $\Delta^8$ -2',4'-dihydroxy-3',5'-dimethoxy-3,4-methylenedioxy-1',2',3',4'-tetrahydro-7.3',8.1'-neolignan            | [16] |
| 209 | (7S,8R,1'S,2'S,3'R,4'S)-1',2',3',4'-tetrahydro-2',4'-dihydroxy-3',5'-dimethoxy-3,4-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene                       | (7S,8R,1'S,2'S,3'R,4'S)- $\Delta^8$ -2',4'-dihydroxy-3',5'-dimethoxy-3,4-methylenedioxy-1',2',3',4'-tetrahydro-7.3',8.1'-neolignan            | [16] |
| 210 | (7S,8R,1'S,2'S,3'R,4'S)-1',2',3',4'-tetrahydro-2',4'-<br>dihydroxy-5,3',5'-trimethoxy-3,4-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene                | (7S,8R,1'S,2'S,3'R,4'S)- $\Delta^8$ -2',4'-dihydroxy-3,3',5'-trimethoxy-4,5-methylenedioxy-1',2',3',4'-tetrahydro-7.3',8.1'-neolignin         | [16] |
| 211 | <i>rel</i> -(7R,8R,1'S,2'R,3'S,4'R)-1',2',3',4'-tetrahydro-2',4'-<br>dihydroxy-5'-methoxy-3,4-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene            | <i>rel</i> -(7S,8S,1'R,4'S,5'R,6'S)- $\Delta^{2,8}$ -4',6'-dihydroxy-3'-methoxy-3,4-methylenedioxy-8.1',7.5'-neolignan                        | [59] |
| 214 | (7R,8R,1'R,2'R,3'S,4'S)-1',2',3',4'-tetrahydro-2',4'-<br>dihydroxy-3,4-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-5'(6'H)-one                       | (7R,8R,1'R,2'R,3'S,4'S)- $\Delta^8$ -2',4'-dihydroxy-3,4-methylenedioxy-1',2',3',4',5',6'-hexahydro-5'-oxo-7.3',8.1'-neolignan                | [43] |
| 215 | (7R,8R,1'R,2'R,3'S,4'S)-1',2',3',4'-tetrahydro-2'-<br>hydroxy-4'-methoxy-3,4-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-5'(6'H)-one                 | (7R,8R,1'R,2'R,3'S,4'S)- $\Delta^8$ -2'-hydroxy-4'-methoxy-3,4-methylenedioxy-1',2',3',4',5',6'-hexahydro-5'-oxoneolignan                     | [43] |
| 216 | (7R,8R,1'R,2'R,3'S,4'R)-2'-hydroxy-3,4'-dimethoxy-4,5-methylenedioxy-1',2',3',4'-tetrahydro-7.3',8.1'-cycloneolign-8'-ene-5'(6'H)-one                 | (7R,8R,1'R,2'R,3'S,4'R)- $\Delta^8$ -2'-hydroxy-3,4'-dimethoxy-4,5-methylenedioxy-1',2',3',4',5',6'-hexahydro-5'-oxoneolignan                 | [43] |
| 217 | (7S,8R,1'R,2'S,3'R,4'R)-1',2',3',4'-tetrahydro-2',4'-<br>dihydroxy-3,3'-dimethoxy-4,5-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-5'(6'H)-one        | (7S,8R,1'R,2'S,3'R,4'R)- $\Delta^8$ -2',4'-dihydroxy-3,3'-dimethoxy-4,5-methylenedioxy-1',2',3',4',5',6'-hexahydro-5'-oxo-7.3',8.1'-neolignan | [77] |
| 218 | (7R,8R,1'R,3'S)-5',6'-dihydro-4-hydroxy-3,5'-dimethoxy-7.3',8.1'-cycloneolign-8'-ene-2',4'(1'H,3'H)-dione                                             | (7R,8R,1'R,3'S)- $\Delta^8$ -4-hydroxy-3,5'-dimethoxy-1',2',3',4',5',6'-hexahydro-4'-oxo-7.3',8.1'-neolignan                                  | [43] |
| 219 | (7R,8S,1'R,2'S,3'S)-1',2'-dihydro-2'-hydroxy-3,3',5'-<br>trimethoxy-4,5-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-4'(3'H)-one                      | (7R,8S,1'R,2'S,3'S)- $\Delta^8$ -2'-hydroxy-3,3',5'-trimethoxy-4,5-methylenedioxy-1',2',3',4'-tetrahydro-4'-oxo-7.3',8.1'-neolignan           | [50] |
| 220 | <i>rel</i> -(7S,8S,1'R,2'S,3'R)-2'-acetoxy-1',2'-dihydro-5'-methoxy-3,4-methylenedioxy-7.3',8.1'-cycloneolign-8'-ene-4'(3'H)-one                      | <i>rel</i> -(7S,8S,1'R,5'R,6'S)- $\Delta^{2,8}$ -6'-acetoxy-3'-methoxy-3,4-methylenedioxy-4'-oxo-8.1',7.5'-neolignan                          | [59] |



|     |                                                                                                                                                                                                                |                                                                                                                                                                                                                |      |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 221 | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,3' <i>S</i> ,4' <i>S</i> ,5' <i>S</i> )-3',4',5',6'-tetrahydro-4'-hydroxy-3,3',5'-trimethoxy-4,5-methylenedioxy-7,3',8.1'-cycloneolign-8'-ene-2'(1'H)-one    | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,3' <i>S</i> ,4' <i>S</i> ,5' <i>S</i> )- $\Delta^8$ -4'-hydroxy-3,3',5'-trimethoxy-4,5-methylenedioxy-1',2',3',4',5',6'-hexahydro-2'-oxo-7,3',8.1'-neolignan | [77] |
| 222 | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,3' <i>S</i> ,4' <i>S</i> ,5' <i>S</i> )-3',4',5',6'-tetrahydro-4'-hydroxy-3,4,5,3',5'-pentamethoxy-7,3',8.1'-cycloneolign-8'-ene-2'(1'H)-one                 | <i>rel</i> -(7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,3' <i>S</i> ,4' <i>S</i> ,5' <i>S</i> )- $\Delta^8$ -4'-hydroxy-3,4,5,3',5'-pentamethoxy-1',2',3',4',5',6'-hexahydro-2'-oxo-7,3',8.1'-neolignan              | [77] |
| 223 | <i>rel</i> -(7 <i>R</i> ,8 <i>R</i> ,1' <i>R</i> ,3' <i>R</i> ,4' <i>R</i> ,5' <i>S</i> )-3',4',5',6'-tetrahydro-4'-hydroxy-5'-methoxy-3,4-methylenedioxy-7,3',8.1'-cycloneolign-8'-ene-2'(1'H)-one            | <i>rel</i> -(7 <i>S</i> ,8 <i>S</i> ,1' <i>S</i> ,3' <i>R</i> ,4' <i>S</i> ,5' <i>S</i> )- $\Delta^8$ -4'-hydroxy-3'-methoxy-3,4-methylenedioxy-6'-oxo-8.1',7.5'-neolignan                                     | [59] |
| 224 | (7 <i>R</i> ,8 <i>S</i> ,1' <i>S</i> ,2' <i>S</i> ,3' <i>S</i> ,4' <i>R</i> )-1',2',3',4'-tetrahydro-2',4'-dihydroxy-3,3'-dimethoxy-4,5-methylenedioxy-7,3',8.1'-cycloneolign-8'-ene-5'(6'H)-one               | (7 <i>R</i> ,8 <i>S</i> ,1' <i>S</i> ,2' <i>S</i> ,3' <i>S</i> ,4' <i>R</i> )- $\Delta^8$ -2',4'-dihydroxy-3,3'-dimethoxy-4,5-methylenedioxy-1',2',3',4',5',6'-hexahydro-5'-oxo-7,3',8.1'-neolignan            | [50] |
| 227 | <i>rel</i> -(7 <i>R</i> ,8 <i>R</i> ,1' <i>R</i> ,2' <i>R</i> ,3' <i>S</i> ,4' <i>R</i> ,5' <i>R</i> )-1',2',3',4',5',6'-hexahydro-2',4'-dihydroxy-5'-methoxy-3,4-methylenedioxy-7,3',8.1'-cycloneolign-8'-ene | <i>rel</i> -(7 <i>S</i> ,8 <i>S</i> ,1' <i>S</i> ,3' <i>R</i> ,4' <i>S</i> ,5' <i>S</i> ,6' <i>S</i> )- $\Delta^8$ -4',6'-dihydroxy-3'-methoxy-3,4-methylenedioxy-8.1',7.5'-neolignan                          | [59] |
| 228 | (7 <i>R</i> ,8 <i>R</i> ,1' <i>S</i> ,3' <i>S</i> )-4-hydroxy-3,5'-dimethoxy-7,3',8.1'-cycloneolign-8'-ene-2',4'(1'H,3'H)-dione                                                                                | (7 <i>R</i> ,8 <i>R</i> ,1' <i>S</i> ,3' <i>S</i> )- $\Delta^8$ -4-hydroxy-3,5'-dimethoxy-1',2',3',4'-tetrahydro-4'-oxo-7,3',8.1'-neolignan                                                                    | [43] |
| 229 | <i>rel</i> -(7 <i>R</i> ,8 <i>R</i> ,1' <i>S</i> ,3' <i>S</i> )-5'-methoxy-3,4-methylenedioxy-7,3',8.1'-cycloneolign-8'-ene-2',4'(1'H,3'H)-dione                                                               | <i>rel</i> -(1 <i>R</i> ,5 <i>S</i> ,6 <i>R</i> ,7 <i>R</i> )-1-allyl-3-methoxy-7-methyl-4,8-dioxo-6-piperonylbicyclo[3,2,1]oct-2-ene                                                                          | [69] |
| 230 | (7 <i>R</i> ,8 <i>R</i> ,1' <i>S</i> ,3' <i>S</i> )-3,5'-dimethoxy-4,5-methylenedioxy-7,3',8.1'-cycloneolign-8'-ene-2',4'(1'H,3'H)-dione                                                                       | (7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,3' <i>S</i> )- $\Delta^8$ -3,5'-dimethoxy-4,5-methylenedioxy-1',2',3',4'-tetrahydro-2',4'-dioxo-7,3',8.1'-neolignan                                                      | [25] |
| 231 | (7 <i>R</i> ,8 <i>R</i> ,1' <i>S</i> ,3' <i>S</i> )-3,4,5,5'-tetramethoxy-3,4-methylenedioxy-7,3',8.1'-cycloneolign-8'-ene-2',4'(1'H,3'H)-dione                                                                | (7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,3' <i>S</i> )- $\Delta^8$ -3,4,5,5'-tetramethoxy-1',2',3',4'-tetrahydro-2',4'-dioxo-7,3',8.1'-neolignan                                                                  | [25] |
| 232 | (7 <i>S</i> ,8 <i>R</i> ,1' <i>R</i> ,2' <i>S</i> ,3' <i>R</i> )-2'-acetoxy-1',2',5',6'-tetrahydro-3',5'-dimethoxy-3,4-methylenedioxy-7,3,8.1'-cycloneolign-8'-ene-4'(3'H)-one                                 | (7 <i>S</i> ,8 <i>R</i> ,1' <i>S</i> ,2' <i>S</i> ,3' <i>R</i> )- $\Delta^8$ -1',2',3',4'-tetrahydro-4'-oxo-7,3',8.1'-neolignan                                                                                | [80] |
| 246 | (7 <i>R</i> ,8 <i>R</i> ,3' <i>S</i> ,5' <i>S</i> )-3,4,5,5'-tetramethoxy-7,3',8.5'-cycloneolign-8'-ene-2',4'(3'H,5'H)-dione                                                                                   | (7 <i>R</i> ,8 <i>R</i> ,3' <i>S</i> ,5' <i>S</i> )- $\Delta^8$ -3,4,5,5'-tetramethoxy-2',3',4',5'-tetrahydro-2',4'-dioxo-7,3',8.5'-neolignan                                                                  | [28] |

**Table 5.** Semi-systematic names and names in references of uncommon lignans

| No. | Semi-systematic names                                                                                                 | Names in references                                                                                                    | Ref. |
|-----|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------|
| 258 | (7 <i>R</i> ,8 <i>S</i> )-7,5'-Epoxy-3,2'-dimethoxy-4,5-methylenedioxy-1',7'-seco-8,4'-neolign-8'-ene-1',7'-ether     | (2 <i>R</i> ,3 <i>S</i> )-6-O-allyl-5-methoxy-2-(3'-methoxy-4',5'-methylenedioxyphenyl)-3-methyl-2,3-dihydrobenzofuran | [46] |
| 259 | (7 <i>S</i> ,8 <i>S</i> )-7,5'-epoxy-3,2'-dimethoxy-4,5-methylenedioxy-1',7'-seco-8,4'-neolign-8'-ene-1',7'-ether     | (2 <i>S</i> ,3 <i>S</i> )-6-O-allyl-5-methoxy-2-(3'-methoxy-4',5'-methylenedioxyphenyl)-3-methyl-2,3-dihydrobenzofuran | [46] |
| 260 | (7 <i>S</i> ,8 <i>S</i> )-7,5'-epoxy-3,4,5,2'-tetramethoxy-1',7'-seco-8,4'-neolign-8'-ene-1',7'-ether                 | (2 <i>S</i> ,3 <i>S</i> )-6-O-allyl-5-methoxy-2-(3',4',5'-trimethoxyphenyl)-3-methyl-2,3-dihydrobenzofuran             | [64] |
| 261 | (7 <i>S</i> ,8 <i>S</i> )-7,5'-epoxy-3,4,5,2',5'-pentamethoxy-1',7'-seco-8,4'-neolign-8'-ene-1',7'-ether              | (2 <i>S</i> ,3 <i>S</i> )-6-O-allyl-5,7-dimethoxy-2-(3',4',5'-trimethoxyphenyl)-3-methyl-2,3-dihydrobenzofuran         | [46] |
| 262 | (7 <i>S</i> ,8 <i>S</i> )-7,5'-epoxy-2'-methoxy-4,5-methylenedioxy-1',7'-seco-8,4'-neolign-8'-ene-1',7'-ether         | (2 <i>S</i> ,3 <i>S</i> )-6-O-allyl-5-methoxy-3-methyl-2-piperonyl-2,3-dihydrobenzofuran                               | [42] |
| 263 | (7 <i>S</i> ,8 <i>S</i> )-7,5'-epoxy-2',6'-dimethoxy-4,5-methylenedioxy-1',7'-seco-8,4'-neolign-8'-ene-1',7'-ether    | (7 <i>S</i> ,8 <i>S</i> )- $\Delta^{1',3',5',8'}$ -3',5'-trimethoxy-3,4-methylenedioxy-8.1',7.O.6',4'.O.7'-neolignan   | [45] |
| 264 | (7 <i>S</i> ,8 <i>S</i> )-7,5'-epoxy-3,2',6'-trimethoxy-4,5-methylenedioxy-1',7'-seco-8,4'-neolign-8'-ene-1',7'-ether | (7 <i>S</i> ,8 <i>S</i> )- $\Delta^{1',3',5',8'}$ -5,3',5'-trimethoxy-3,4-methylenedioxy-8.1',7.O.6',4'.O.7'-neolignan | [45] |
| 267 | <i>rel</i> -2'-methoxy-3,4-methylenedioxy-1',7'-seco-8,4'-neolign-8'-ene-1',7'-ether                                  | <i>rel</i> -(8 <i>S</i> )- $\Delta^{8'}$ -3'-methoxy-3,4-methylenedioxy-7-oxo-8.1',7':1'O.4'-neolignan                 | [59] |