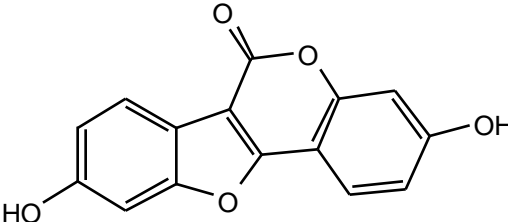
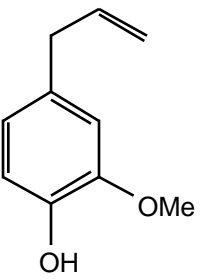
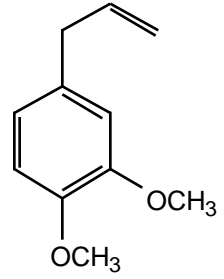
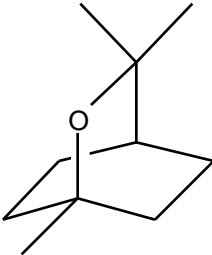
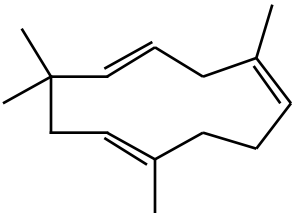
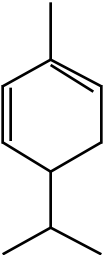


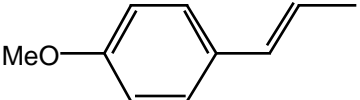
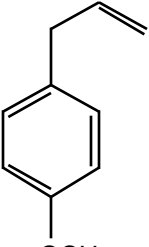
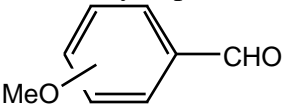
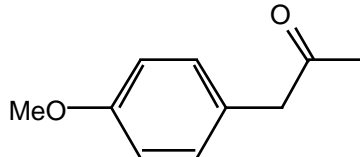
## Chemical Components in Herbs and Spices

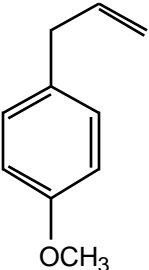
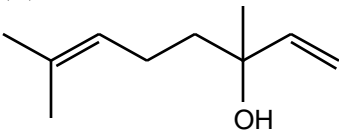
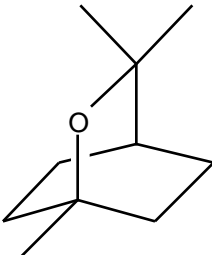
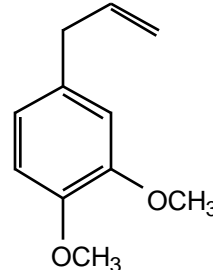
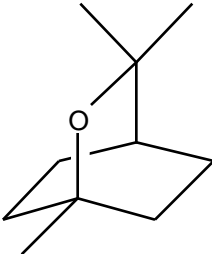
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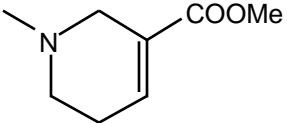
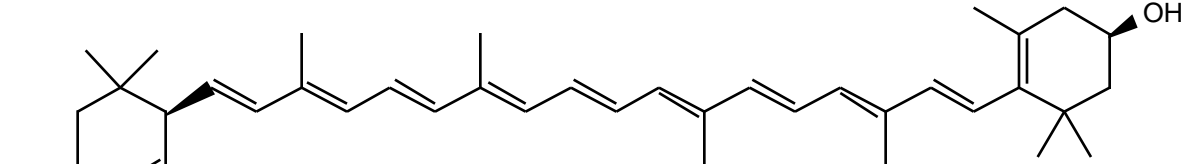
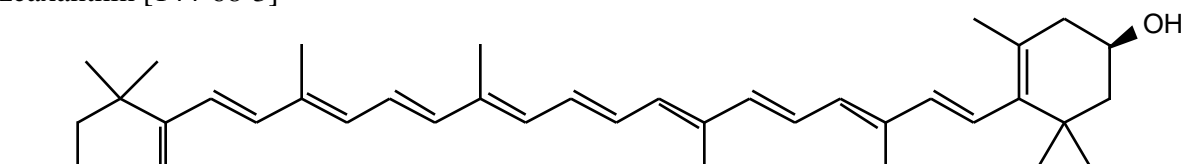
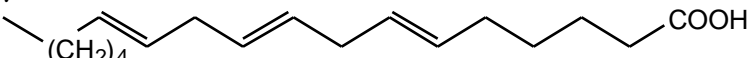
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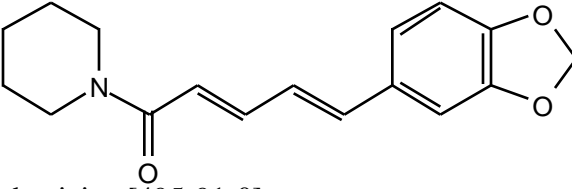
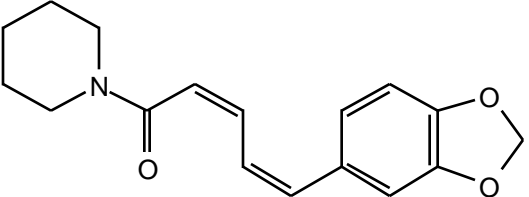
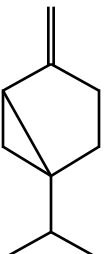
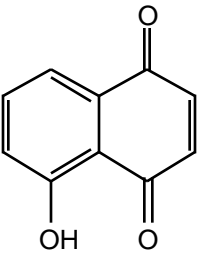
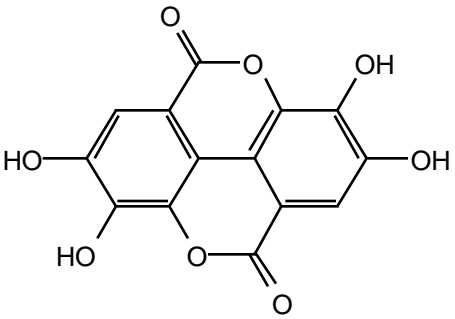
| Common Name | Latin Name      | Chemical Component  |
|-------------|-----------------|---|
| Acacia      | Acacia senegal  |   |
| Agar        | Gelidium spp.   |   |
| Alfalfa     | Medicago sativa | coumestrol [479-13-0]<br> |

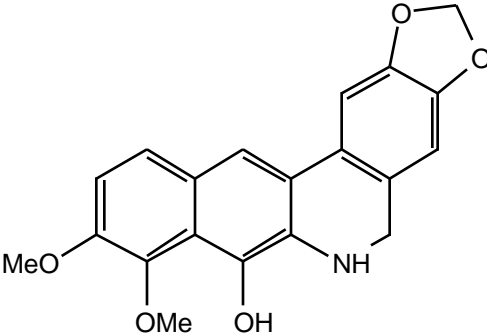
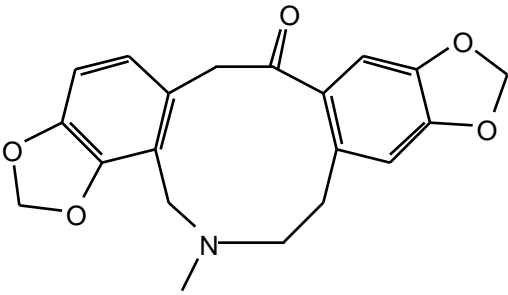
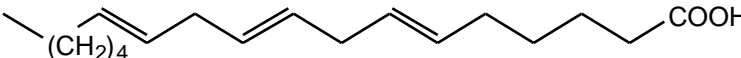
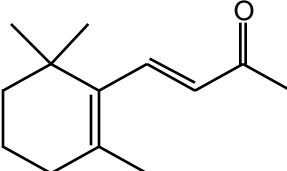
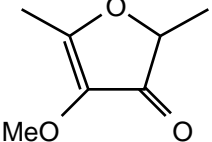
|          |                |  |   |
|----------|----------------|--|---|
| Allspice | Pimenta dioica | eugenol [97-53-0]<br> | methyleugenol (4-allylveratrole) [93-15-2]<br><br><br>eucalyptol (1,8-cineole) [470-82-6]<br><br><br>$\alpha$ -caryophyllene [6753-98-6]<br> |
| Aloe     | Aleo vera      |  | $(\pm)$ - $\alpha$ -phellandrene [99-83-2]<br>   |

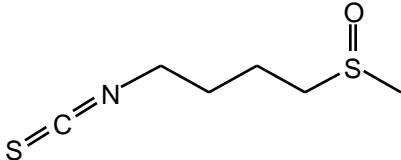
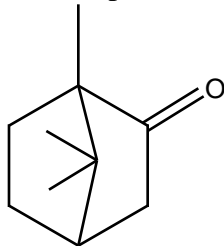
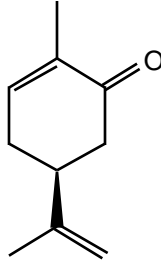
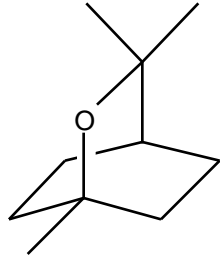
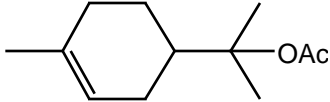
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|----------------|-----------------------|--|--|
| Anise          | Pimpinella anisum     | <p>anethole [104-46-1]</p>  <p>estragole (4-allylanisole, methyl chavicol) [140-67-0]</p>  <p>anisaldehyde p- [123-11-5], o- [135-02-4], m- [591-31-1]</p>  | <p>anisketone [122-84-9]</p>  |
| Artichoke      | Cynara scolymus       |  |  |
| Asparagus      | Asparagus officinalis |  |  |
| Balsam of Tolu | Myroxylon balsamum    |  |  |

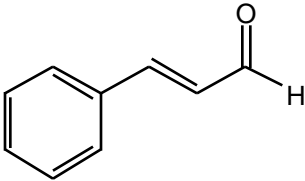
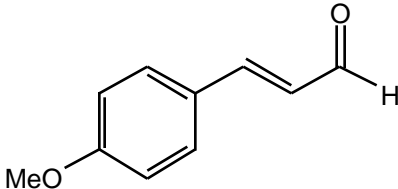
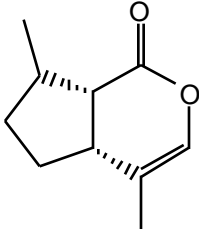
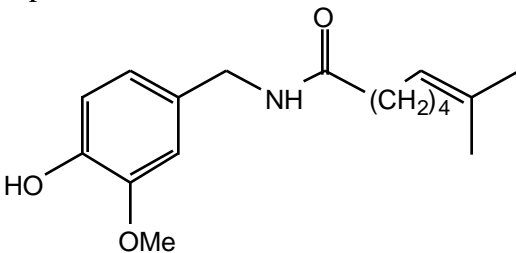
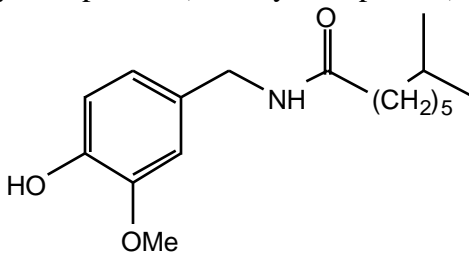
|            |                  |   |
|------------|------------------|---|
| Basil      | Ocimum basilicum | <p>estragole (4-allylanisole, methyl chavicol) [140-67-0]    methyleugenol (4-allylveratrole) [93-15-2]</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>(±)-linalool [78-70-6]</p>  <p>eucalyptol (1,8-cineole) [470-82-6]</p>  </div> <div style="text-align: center;">  </div> </div> |
| Bay leaves | Laurus spp.      | <p>eucalyptol (1,8-cineole) [470-82-6]</p>   |

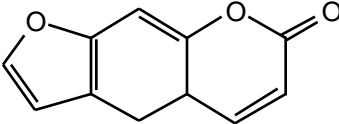
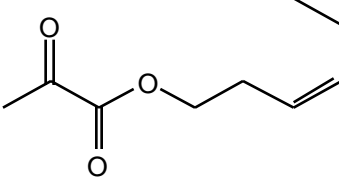
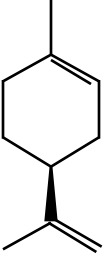
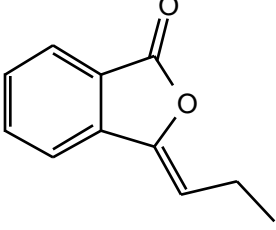
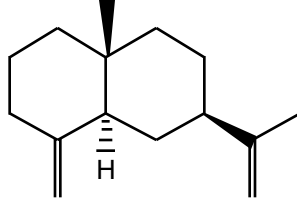
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|----------------|---------------------|--|
| Betel nut      | Areca catechu       | arecoline [63-75-2]<br>  |
| Bilberry fruit | Vaccinium myrtillus | (+)-lutein (xanthophyll) [127-40-2]<br><br>zeaxanthin [144-68-3]<br> |
| Black currant  | Ribes nigrum        | $\gamma$ -linolenic acid [506-26-3]<br>  |

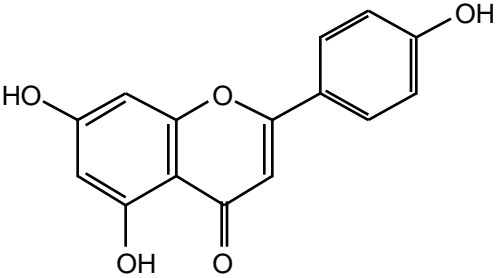
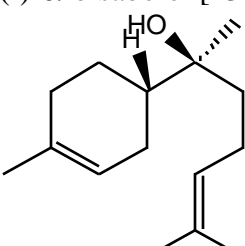
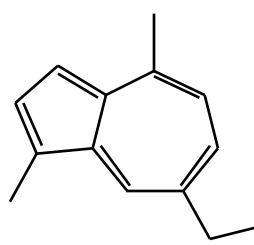
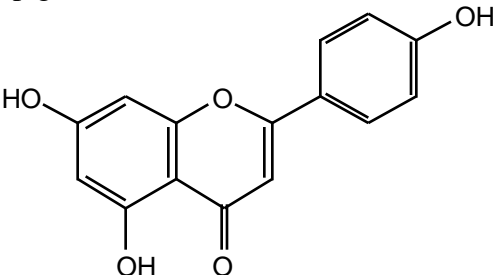
|              |               |   |
|--------------|---------------|---|
| Black pepper | Piper nigrum  | <p>piperine [94-62-2]</p>  <p>chavicine [495-91-0]</p>  <p>sabinene [3387-41-5]</p>  |
| Black walnut | Juglans nigra | <p>juglone [481-39-0]</p>  <p>ellagic acid [476-66-4]</p>    |

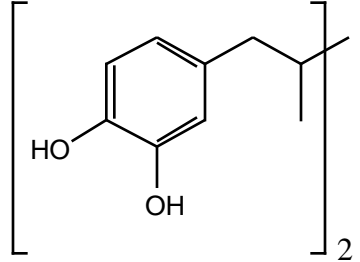
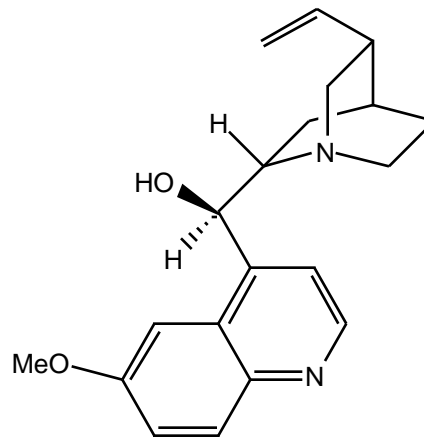
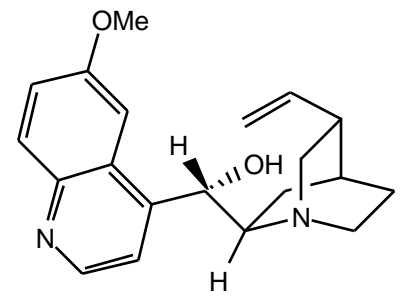
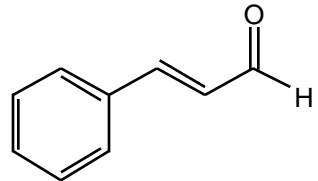
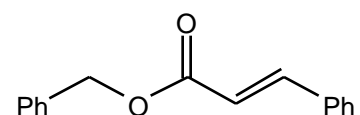
|                      |                        |  |   |
|----------------------|------------------------|--|---|
| Bloodroot            | Sanguinaria canadensis | berberine [10134-52-8]<br>                             | protopine [130-86-9]<br> |
| Borage               | Borago officinalis     | $\gamma$ -linolenic acid [506-26-3]<br>                |   |
| Boronia flower       | Boronia megastigma     | $\beta$ -ionone [14901-07-6]<br>                     |   |
| Bramble (blackberry) | Rubus fruticosus       | 2,5-dimethyl-4-methoxy-3(2H)-furanone [4077-47-8]<br> |   |

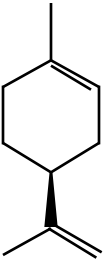
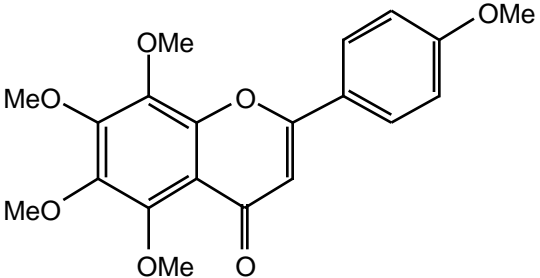
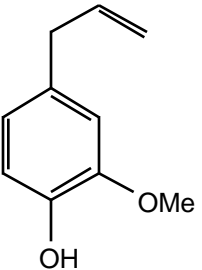
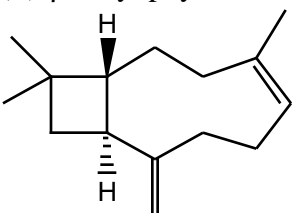
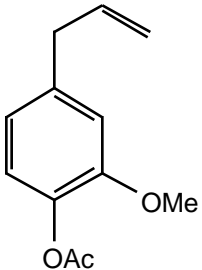
|               |                                       |   |
|---------------|---------------------------------------|---|
| Broccoli tops | Brassica oleracea<br>Brassica italica | sulforaphane [4478-93-7]<br>  |
| Camphor tree  | Cinnamomum<br>camphorum               | (±)-camphor [76-22-2]<br>  |
| Caraway seed  | Carum carvi                           | (+)-carvone [2244-16-8]<br>  |
| Cardamom      | Elettaria<br>cardamomum               | eucalyptol (1,8-cineole) [470-82-6]      (±)-α-terpinylacetate [80-26-2]<br>  |

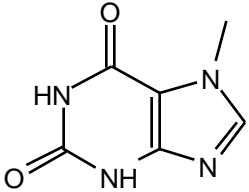
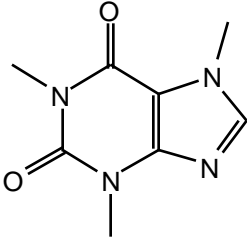
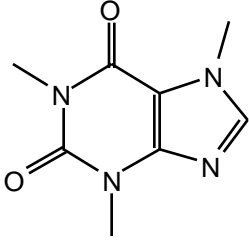
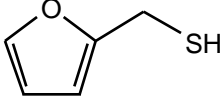
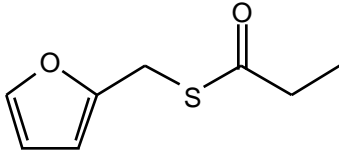
|                 |                       |   |  |
|-----------------|-----------------------|---|--|
| Cassia cinnamon | Cinnamomum aromaticum | cinnamaldehyde (cinnamic aldehyde) [104-55-2]                                       | p-methoxycinnamic aldehyde [1504-74-1]   |
|                 |                       |   |   |
| Castor bean     | Ricinus communis      |   |  |
| Catnip          | Nepeta cataria        | nepetalactone [490-10-8]  |  |
|                 |                       |    |  |
| Cayenne         | Capsicum frutescens   | capsaicin [404-86-4]  | dihydrocapsaicin (nordihydrocapsaicin) [19408-84-5]                                  |
|                 |                       |  |  |

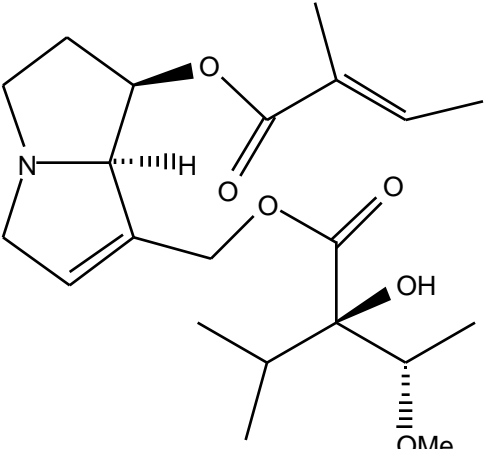
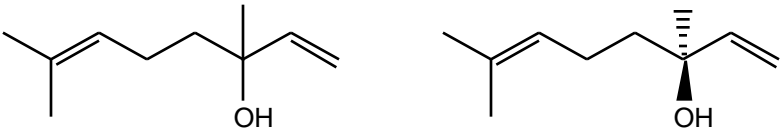
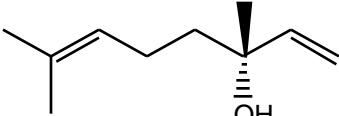
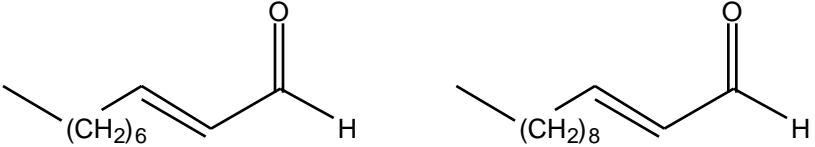
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| Celery | Apium graveolens<br>(seed) | <p>psoralen [20052-19-1]</p>  <p>cis-3-hexenyl-pyruvate [68133-76-6]</p>  <p>(+)-limonene [5989-27-5]</p>  | <p>3-propylidene-1(3H)-isobenzofuranone [17369-59-4]</p>  <p>(+)-β-selinene [17066-67-0]</p>  |
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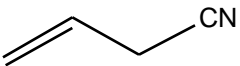
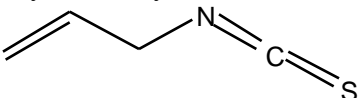
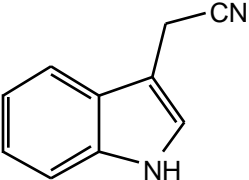
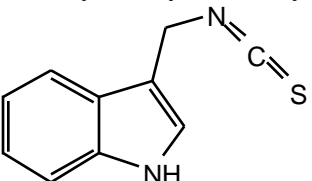
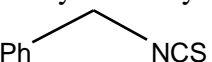
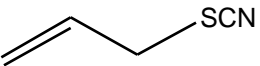
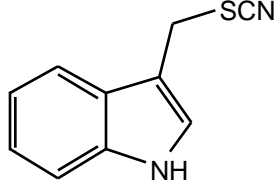
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| Chamomile, German | Matricaria recutita<br>Chamomilla recutita<br>(blue chamomile oil) | apigenin [520-36-5]<br><br><br>(-)- $\alpha$ -bisabolol [23089-26-1]<br> | chamazulene [529-05-5]<br> |
| Chamomile, Roman  | Chamaemelum<br>nobile  | apigenin [520-36-5]<br>   |   |

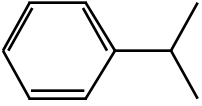
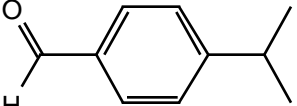
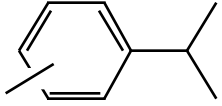
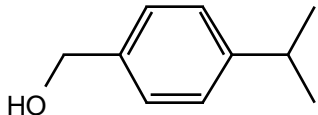
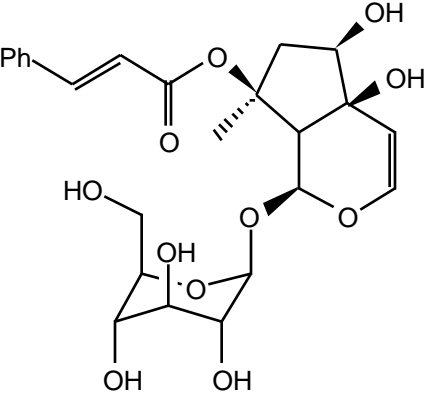
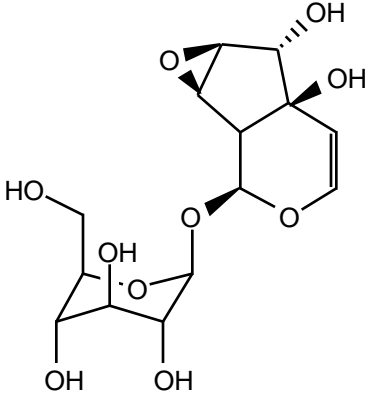
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| Chaparral | Larrea tridentata                         | nordihydroguaiaretic acid [500-38-9]   |   |
|           |   |    |   |
| Chicory   | Cichorium intybus                         |  |   |
| Cinchona  | Cinchona spp.<br>(bark)                   | quinine [130-95-0]   | quinidine [56-54-2]   |
|           |   |   |   |
| Cinnamon  | Cinnamomum verum<br>Cinnamomum zeylanicum | cinnamaldehyde [104-55-2]  | cinnamein (benzylcinnamate) [103-41-3]  |
|           |   |  |  |

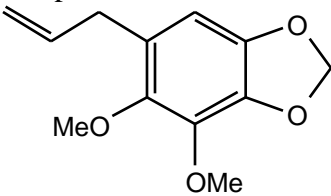
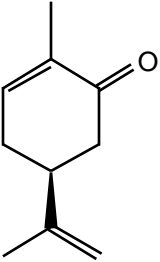
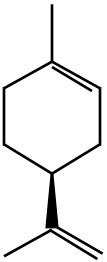
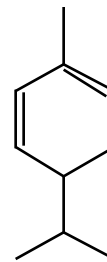
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| Citrus peel | Citrus spp.                | <p>(+)-limonene [5989-27-5]</p>    | <p>tangeretin [481-53-8]</p>      |
| Clove       | Syzygium aromaticum (buds) | <p>eugenol [97-53-0]</p>  <p>(±)-β-caryophyllene [87-44-5]</p>  | <p>acetyleneugenol [93-28-7]</p>  |

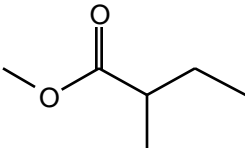
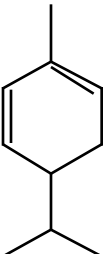
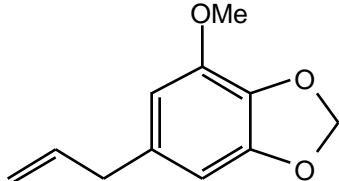
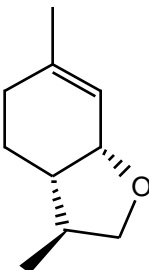
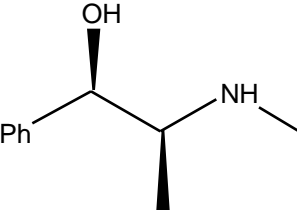
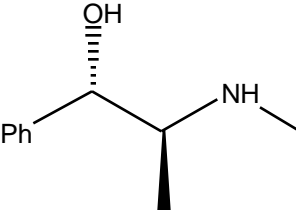
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| Cocoa  | Theobroma cacao<br>(seed)               | theobromine [83-67-0]<br>  | caffeine [58-08-2]<br>                    |
| Coffee | Coffea arabica (seed)                   | caffeine [58-08-2]<br><br>furfuryl mercaptan [98-02-2]<br> | furfuryl thiopropionate [59020-85-8]<br> |
| Cola   | Cola nitida<br>Cola acuminata<br>(seed) |  |  |

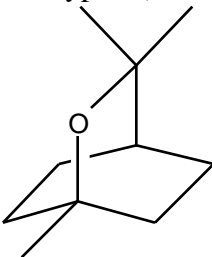
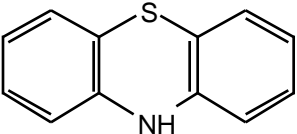
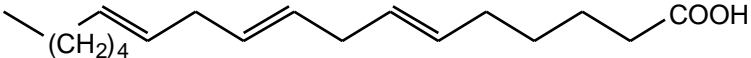
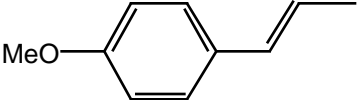
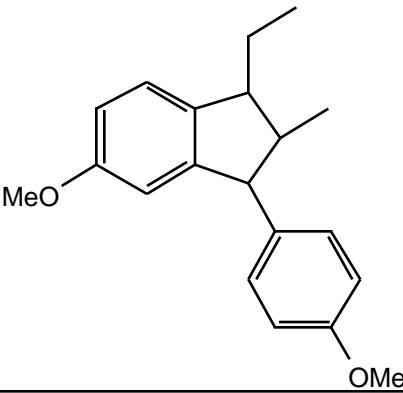
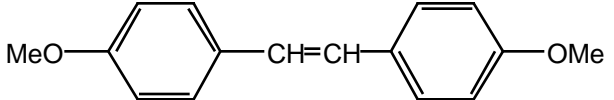
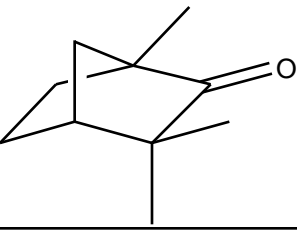
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| Comfrey   | Symphytum officinale      | <p>symphytine [22571-95-5]</p>    |
| Coriander | Coriandrum sativum (seed) | <p>(±)-linalool [78-70-6]      (+)-linalool (coriandrol) [126-90-9]</p>  <p>(-)-linalool [126-91-0]</p>  |
| Coriander | Coriandrum sativum (leaf) | <p>2-decenal [3913-71-3]      2-dodecenal [4826-62-4]</p>   |

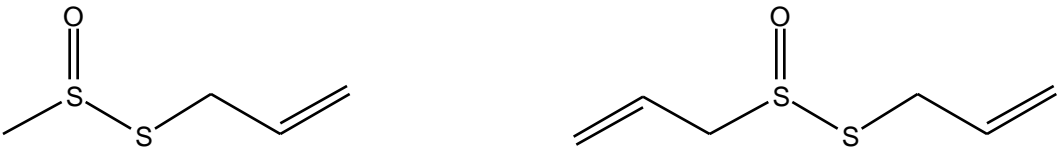
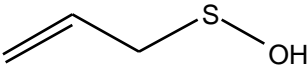
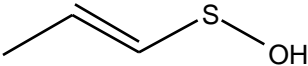
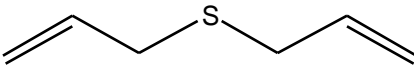
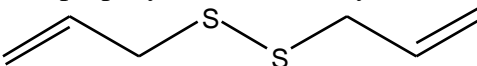
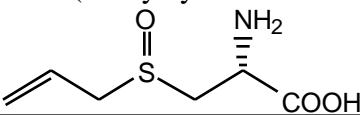
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| Crucifers | Brassica spp. | <p>allylcyanide [109-75-1]</p>  <p>allylisothiocyanate [57-06-7]</p>  <p>3-indoylacetonitrile [771-51-7]</p>  <p>3-indoymethylisothiocyanate [77012-75-0]</p>  <p>benzylisothiocyanate [622-78-6]</p>  | <p>allylthiocyanate [764-49-8]</p>  <p>3-indoymethylthiocyanate (not known)</p>  |
|-----------|---------------|---|--|

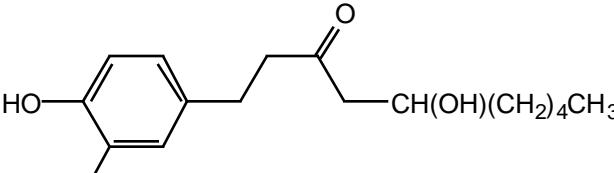
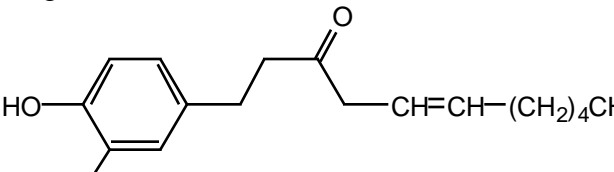
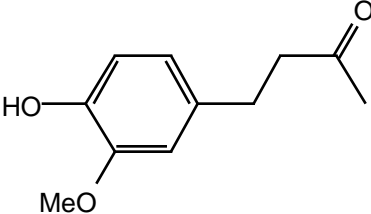
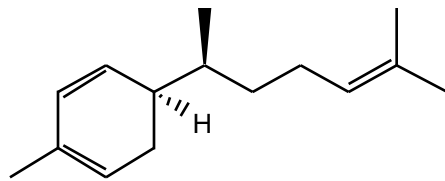
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| Cumin        | Cuminum cyminum                        | <p>cumene [98-82-8]</p>  <p>cumaldehyde (cumenic aldehyde, cuminaldehyde) [122-03-2]</p>  <p>H<br/>dihydrocuminaldehyde</p> | <p>cymene: ortho [527-84-4], meta [535-77-3], para [99-87-6]</p>  <p>cumyl alcohol [536-60-7]</p>  |
| Dandelion    | Taraxacum officinale                   |  |  |
| Devil's claw | Harpagophytum procumbens (root, tuber) | <p>harpagoside [19210-12-9]</p>   | <p>procumbide [20486-27-5]</p>   |

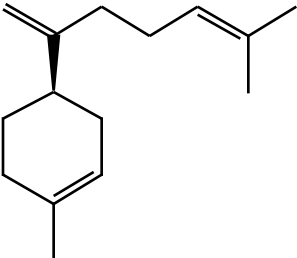
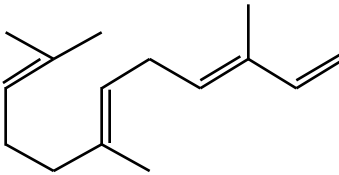
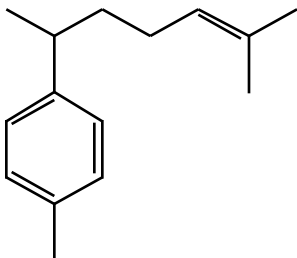
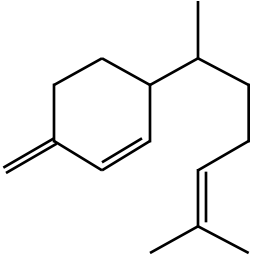
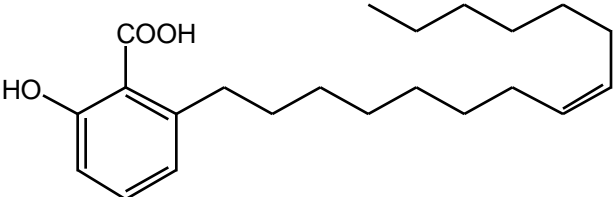
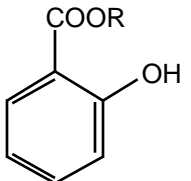
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| Dill | Anethum graveolens<br>(seed) | <p>dillapiol [484-31-1]</p>  <p>(+)-carvone [2244-16-8]    (+)-limonene [5989-27-5]    (±)-<math>\alpha</math>-phellandrene [99-83-2]</p>    |
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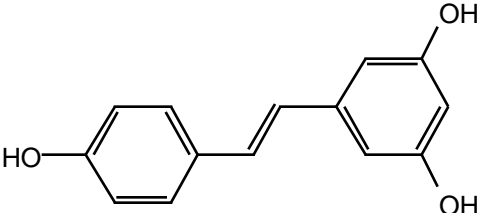
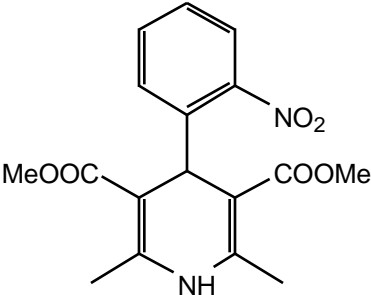
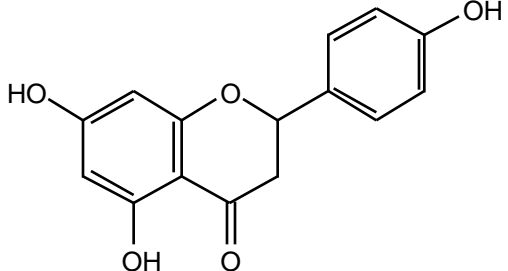
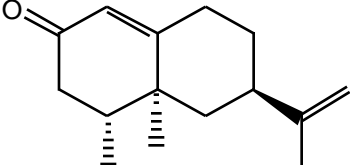
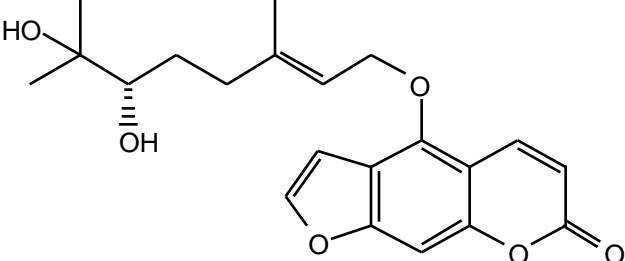
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| Dill      | Anethum graveolens<br>(weed)  | methyl 2-methylbutanoate [868-57-5]<br><br><br>(±)-α-phellandrene [99-83-2]<br><br> | myristicin [607-91-0]<br><br><br>(+)-dill ether [74410-10-9]<br><br> |
| Dulse     | Rhodymenia<br>palmetta<br>Palmaria palmata                                      |  |  |
| Echinacea | Echinacea purpurea<br>Echinacea<br>angustifolia<br>Echinacea pallida<br>(roots) |  |  |
| Ephedra   | Ephedra sinica<br>Ephedra vulgaris  | ephedrine [90-81-3]<br><br>  | pseudoephedrine [90-82-4]<br><br>   |

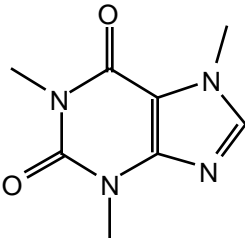
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| Eucalyptus       | Eucalyptus spp.<br>(leaves)     | eucalyptol (1,8-cineole) [470-82-6]<br>  |  |
| Evening primrose | Oenothera biennis<br>(seed oil) | phenothiazine [92-84-2]<br>   | $\gamma$ -linolenic acid [506-26-3]<br>   |
| Fennel           | Foeniculum vulgare              | anethole [104-46-1]<br><br>dianethole (metanethole) [439-22-5]<br> | photoanethole (p,p'-dimethoxystilbene) [4705-34-4]<br><br>(+)-fenchone [4695-62-9]<br> |
| Fenugreek        | Trigonella foenum-graecum       |   |  |

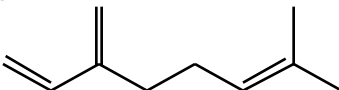
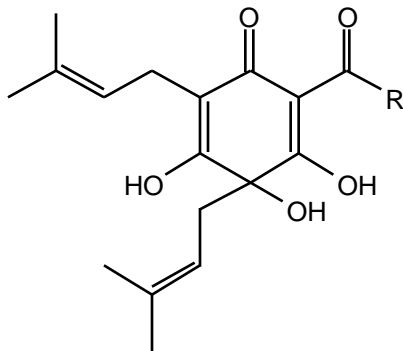
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| Flax            | Linum usitatissimum<br>Linum humile<br>(seeds) |  |
| Fragrant sumach | Rhus aromatica                                 |  |
| Garlic          | Allium sativum<br>(bulb)                       | <p>methyl allylthiosulfate [104228-49-1]      allicin [539-86-6]</p>  <p>allylsulfenic acid (2-propene-1-sulfenic acid) [62965-27-9]</p>  <p>1-propenylsulfenic acid (1-propene-1-sulfenic acid) [3736-99-0]</p>  <p>diallylsulfide [592-88-1]</p>  <p>di-2-propenyldisulfide (diallyldisulfide) [2179-57-9]</p>  <p>alliin (S-allylcysteine sulfoxide, S-(+)-cis-1-propenylcysteine sulfoxide) [556-27-4]</p>  |
| Gentian         | Gentiana lutea<br>(roots)                      |  |

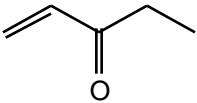
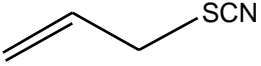
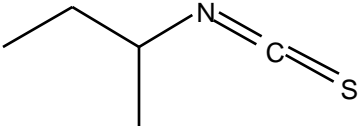
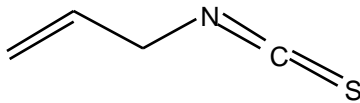
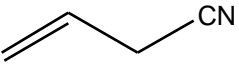
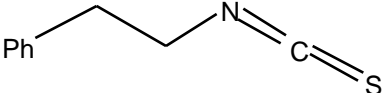
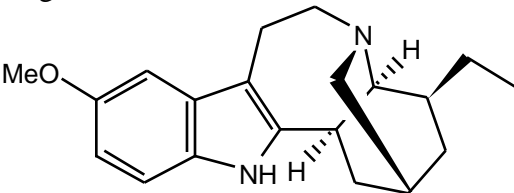
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| Ginger | Zingiber officinale | <p>(±)-gingerol [39886-76-5]</p>  <p>MeO<br/>shogaol [555-66-8]</p>  <p>MeO<br/>zingerone [122-48-5]</p>  <p>(-)-zingiberene [495-60-3]</p>  |
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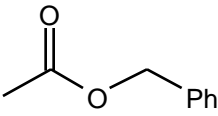
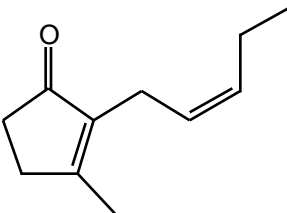
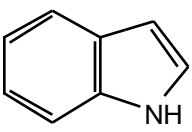
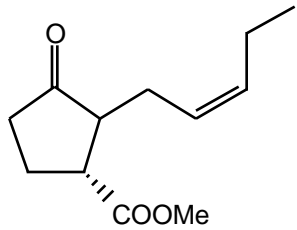
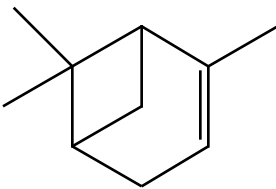
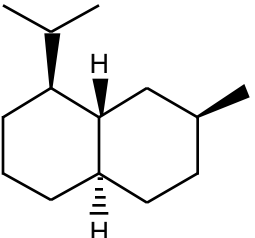
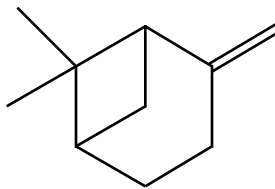
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| Ginger  | Zingiber officinale  | <p>(-)-<math>\beta</math>-bisabolene [495-61-4]</p>  <p><math>\alpha</math>-farnesene [502-61-4]</p>  | <p>(<math>\pm</math>)-ar-curcumene [644-30-4]</p>  <p><math>\beta</math>-sesquiphellandrene [20307-83-9]</p>  |
| Ginkgo  | Ginkgo bilboa        | <p>ginkgolic acid [22910-60-7]</p>   | <p>6-alkylsalicylates</p>   |
| Ginseng | Panax ginseng (root) | ginsenoside   |   |

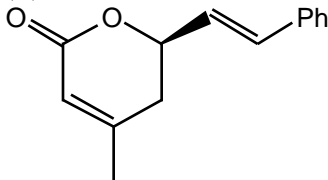
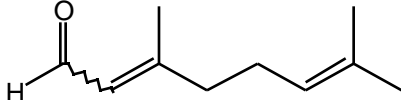
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| Grape      | Vitis vinefera  | resveratrol [501-36-0]<br>   |
| Grapefruit | Citrus paradisi | nifedipine [21829-25-4]      naringenin [480-41-1]<br><br><br><br><br><br> |

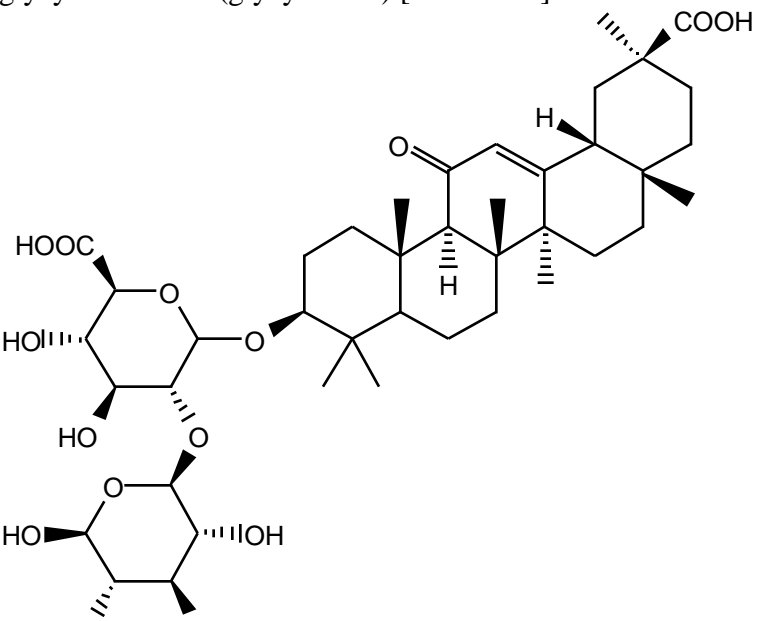
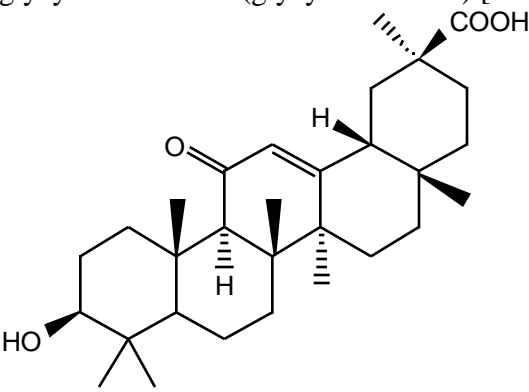
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| Guar gum | Cyamopsis tetragonolobus (seeds) |  |
| Guarana  | Paullinia cupana (seed)          | caffeine [58-08-2]<br> |
| Hawthorn | Crataegus spp.                   |  |
| Hibiscus | Hibiscus rosa-sinensis           |  |

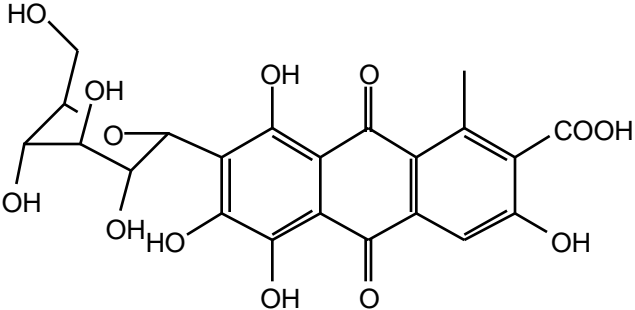
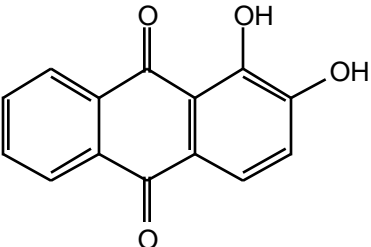
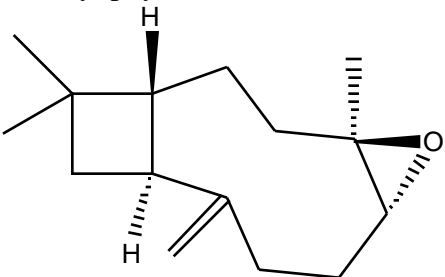
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| Hops | Humulus lupulus<br>(strobiles) | <p><math>\beta</math>-mycrene [123-35-3]</p>  <p>humulone [23510-81-8]<br/> cohumulone [511-25-1]<br/> adhumulone [475-36-5]</p>  <p>R</p> <p>(CH<sub>3</sub>)<sub>2</sub>CHCH<sub>2</sub>- humulone<br/> (CH<sub>3</sub>)<sub>2</sub>CH- cohumulone<br/> CH<sub>3</sub>CH<sub>2</sub>CH(CH<sub>3</sub>)- adhumulone</p> |
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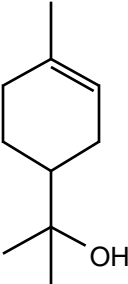
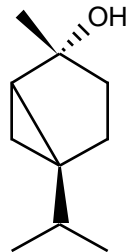
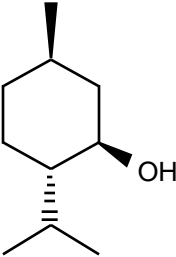
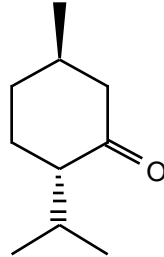
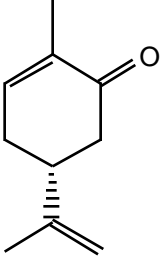
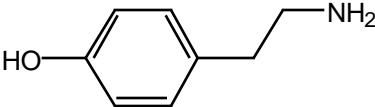
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| Horseradish | <p>Armoracia rusticana<br/>Armoracia<br/>lapathifolia<br/>Cochlearia armoracia<br/>(root)</p> | <p>1-penten-3-one [1629-58-9]</p>  <p>allylthiocyanate [764-49-8]</p>  <p>(±)-2-butyl-isothiocyanate [4426-79-3]</p>  | <p>allylisothiocyanate [57-06-7]</p>  <p>allylcyanide (3-butenitrile) [109-75-1]</p>  <p>2-phenylethylisothiocyanate [2257-09-2]</p>  |
| Iboga       | <p>Tabernanthe iboga<br/>(root bark)</p>  | <p>ibogaine [83-74-9]</p>    |  |

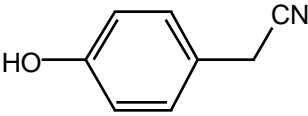
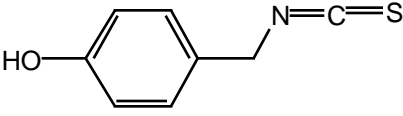
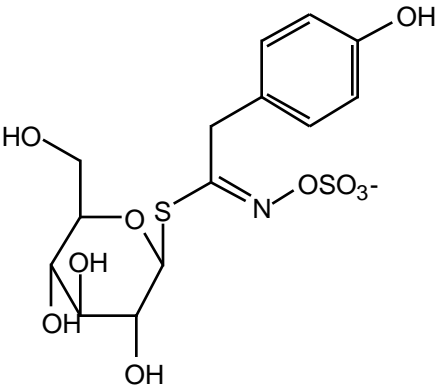
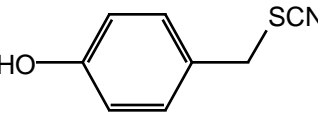
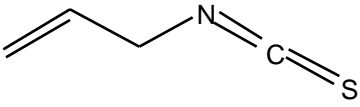
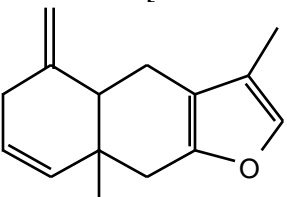
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| Jasmine | <p>Jasminum officinale<br/>Jasminum grandiflorum</p> | <p>benzylacetate [140-11-4]</p>  <p>cis-jasmone [488-10-8]</p>  | <p>indole [120-72-9]</p>  <p>methyljasmonate [1211-29-6]</p>  |
| Juniper | <p>Juniperus communis (berries)</p>                  | <p>(±)-α-pinene [80-56-8]</p>  <p>cadinene [29350-73-0]</p>  | <p>(±)-β-pinene [127-91-3]</p>   |

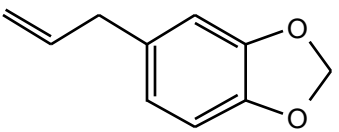
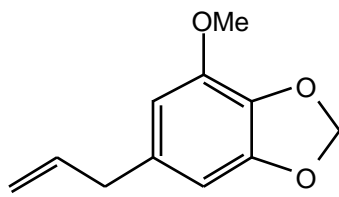
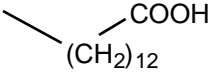
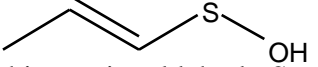
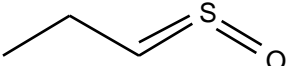
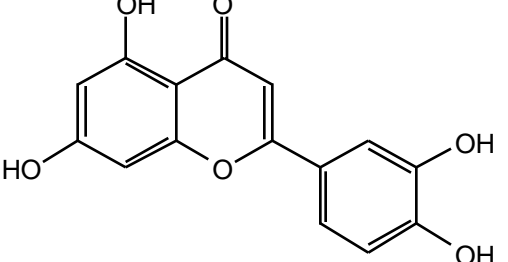
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| Kava       | <i>Piper methysticum</i><br>(root)   | (+)-kavain [500-64-1]<br> |
| Kelp       | <i>Laminaria digitata</i>  |   |
| Lavender   | <i>Lavandula officinalis</i><br><i>Lavandula vera</i><br><i>Lavandula angustifolia</i> |   |
| Lemongrass | <i>Cymbopogon citratus</i><br><i>Cymbopogon flexuosus</i>                              | citral [5392-40-5]<br>    |

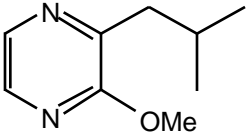
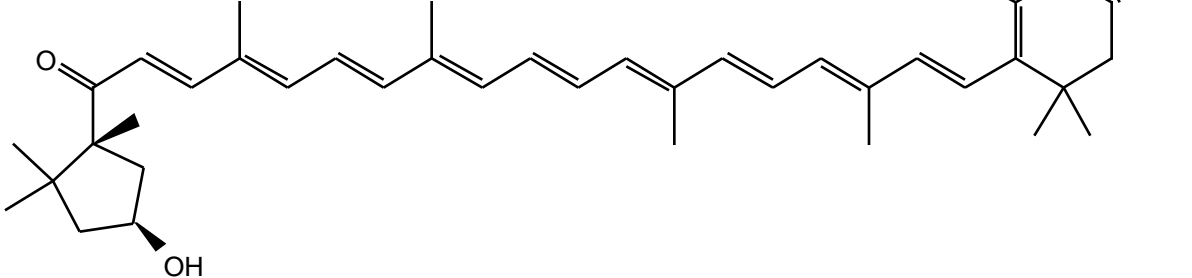
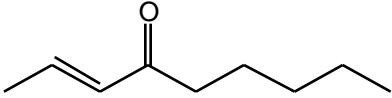
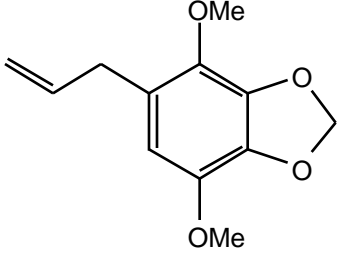
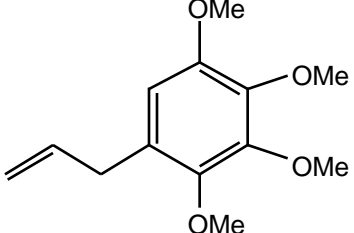
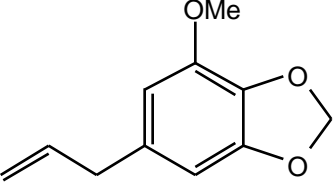
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| Licorice | Glycyrrhiza glabra<br>(root) | <p>glycyrrhizic acid (glycyrrhizin) [1405-86-3]</p>  <p>glycyrrhetic acid (glycyrrhetic acid) [471-53-4]</p>  |
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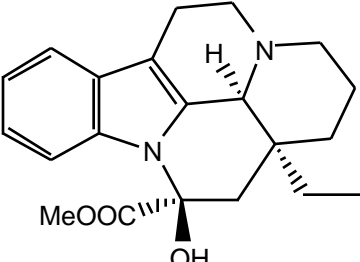
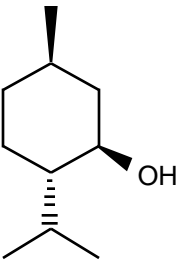
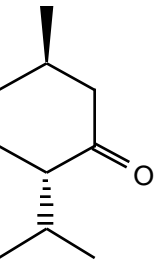
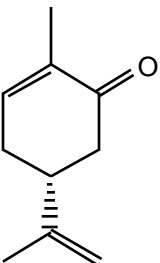
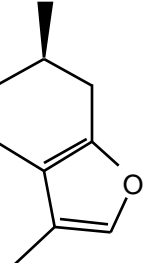
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| Madder    | Rubia tinctorum<br>(root)      | <p>carminic acid [1260-17-9]</p>  <p>alizarin [72-48-0]</p>  |
| Magnolia  | Magnolia officinalis<br>(bark) |  |
| Marijuana | Cannabis sativa                | <p>(-)-caryophyllene oxide [1139-30-6]</p>    |

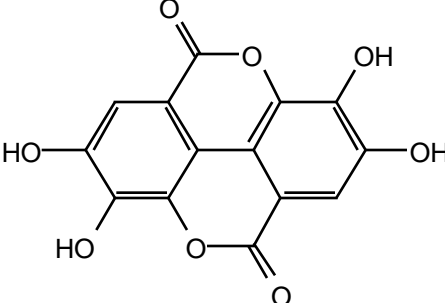
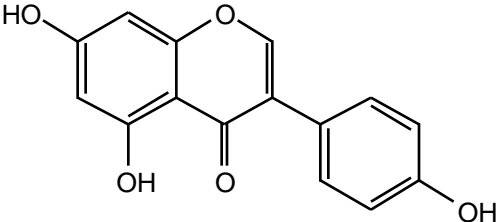
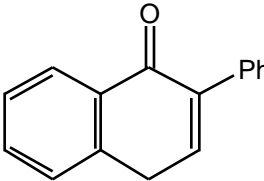
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| Marjoram          | <p>Origanum marjorana<br/>Marjorana hortensis</p> | <p>terpen-4-ol<br/>(±)-<math>\alpha</math>-terpineol [98-55-5]      (+)-cis-sabine hydrate [15537-55-0]</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div>   |
| Milk thistle seed | Silybum marianum                                  | silymarin [65666-07-1]  |
| Mint              | Mentha spp.                                       | <p>(-)-menthol [89-78-1]      menthone [89-80-5]      (-)-carvone [6485-40-1]</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> |
| Mistletoe         | Viscum album                                      | <p>tyramine [51-67-2]</p> <div style="text-align: center;">  </div>   |

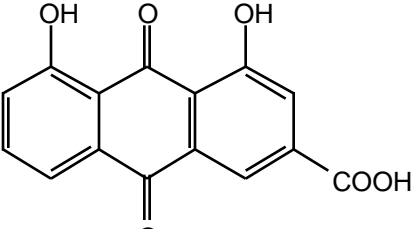
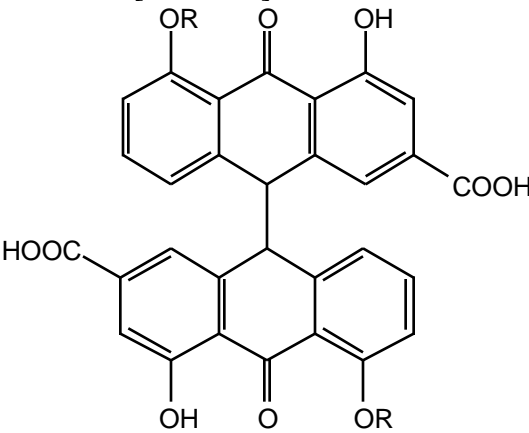
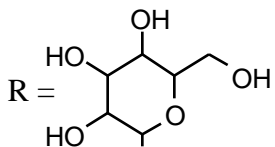
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| Mustard | <p>Brassica alba (white mustard)<br/>           Brassica juncea<br/>           Brassica nigra (black mustard)<br/>           (seed)</p> | <p>p-hydroxybenzylcyanide [14191-95-8]</p>  <p>p-hydroxybenzylisothiocyanate [2086-86-4]</p>  <p>sinalbin [27299-07-6]</p>  | <p>p-hydroxybenzylthiocyanate [13562-66-8]</p>  <p>allylisothiocyanate [57-06-7]</p>  |
| Myrrh   | <p>Commiphora myrrha<br/>           Commiphora molmol (gum resin)</p>   | <p>lindestrene [2221-88-7]</p>   |   |

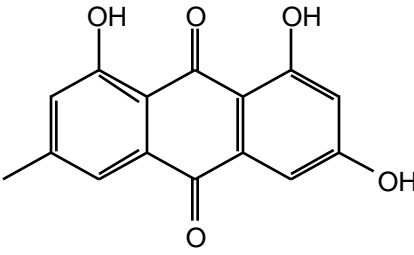
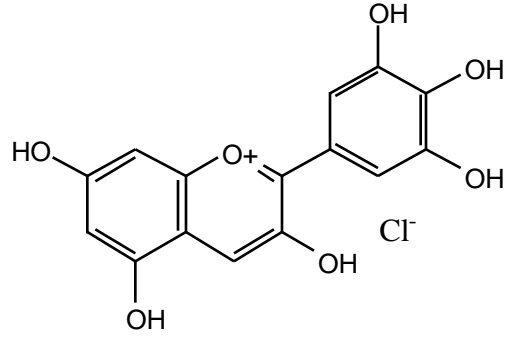
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| Nutmeg     | Myristica fragrans | <p>safrole [94-59-7]</p>  <p>myristicin [607-91-0]</p>  <p>myristic acid [544-63-8]</p>   |
| Oat        | Avena sativa       |   |
| Olive      | Olea europaea      |   |
| Onion bulb | Allium cepa        | <p>1-propenylsulfenic acid (1-propene-1-sulfenic acid) [3736-99-0]</p>  <p>thiopropionaldehyde-S-oxide (propanethiol-S-oxide) [32157-29-2]</p>  <p>quercetin [117-39-5]</p>  |
| Papain     | Carica papaya      | <p>chymopapain [9001-09-6]<br/> EC 3.4.22.6<br/> EC 3.4.4.11</p>  |

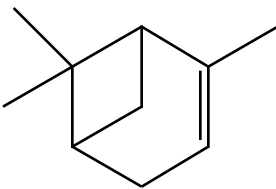
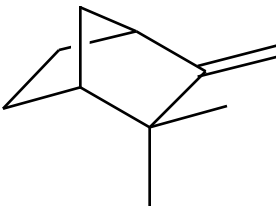
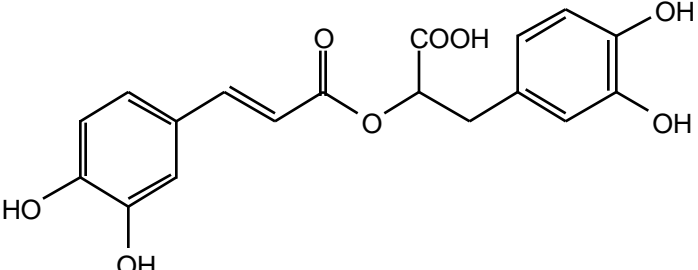
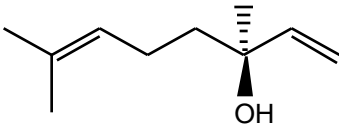
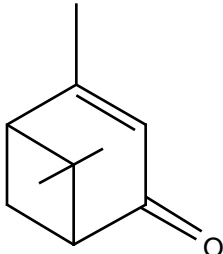
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| Paprika (dried sweet peppers) | Capsicum frutescens   | <p>2-isobutyl-3-methoxypyrazine [24683-00-9]</p>  <p>capsanthin [465-42-9]</p>     | <p>2-nonene-4-one [14309-57-0] (when cooked)</p>  |
| Parsley                       | <p>Petroselinum sativum<br/>Petroselinum crispum (seed)</p> | <p>apirole [523-80-8]</p>  <p>2,3,4,5-tetramethylallylbenzene [15361-99-6]</p>  | <p>myristicin [607-91-0]</p>                     |

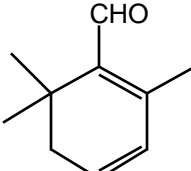
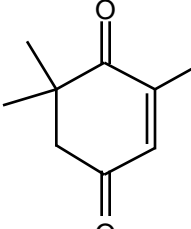
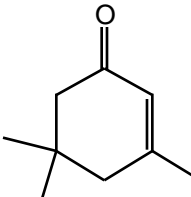
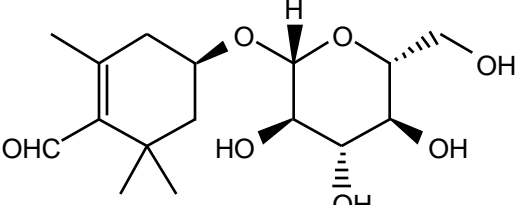
|                        |                                       |  |
|------------------------|---------------------------------------|--|
| Periwinkle             | Vinca minor                           | vincamine [1617-90-9]<br>  |
| Peppermint (spearmint) | Mentha piperita                       | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>(-)-menthol [89-78-1]</p>  </div> <div style="text-align: center;"> <p>menthone [89-80-5]</p>  </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;"> <p>(-)-carvone [6485-40-1]</p>  </div> <div style="text-align: center;"> <p>(+) -menthofuran [17957-94-7]</p>  </div> </div> |
| Plantain               | Plantago lanceolata<br>Plantago major |  |
| Pomegranate            | Punica granatum<br>(root bark)        |  |

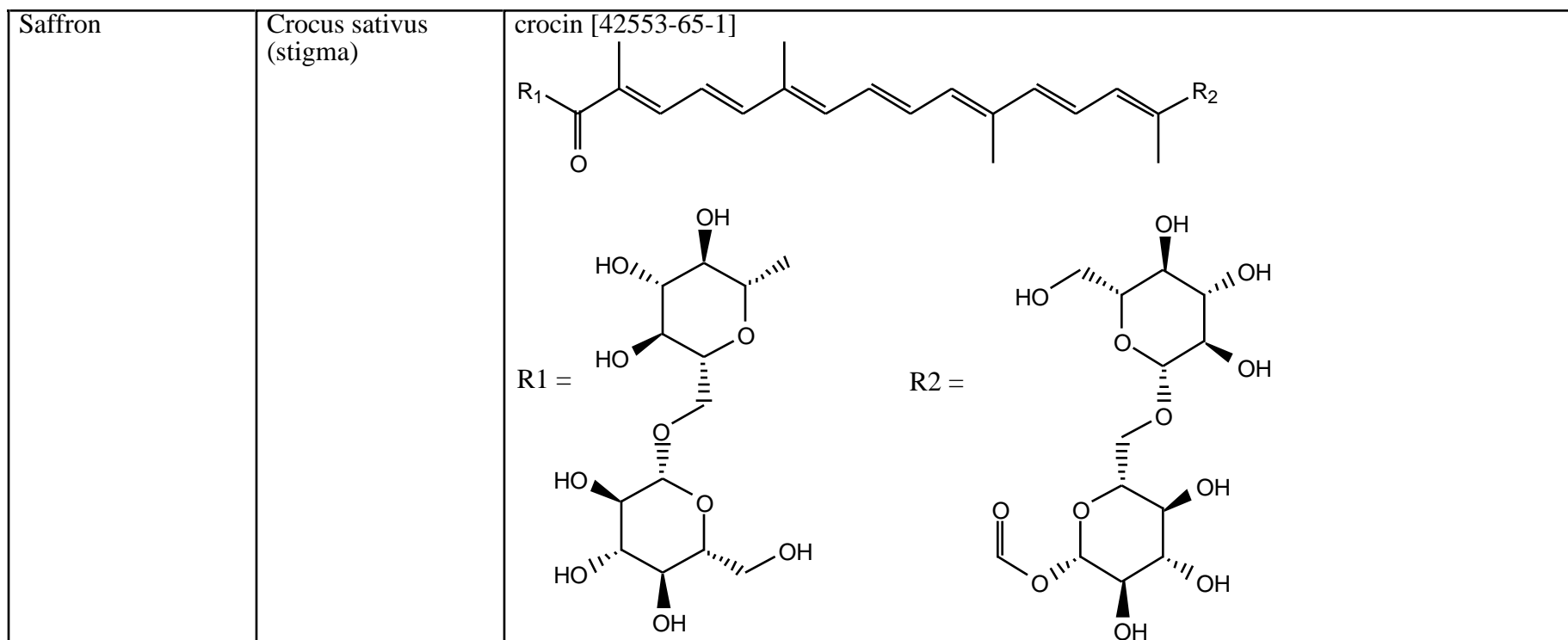
|                   |   |   |
|-------------------|---|---|
| Primrose          | Primula veris<br>Primula officinalis<br>Primula elatior |   |
| Queen Anne's lace | Daucus carota (seed)                                    |   |
| Raspberry         | Rubus idaeus  | ellagic acid [476-66-4]<br>   |
| Red clover        | Trifolium pratense                                      | biochanin A [491-80-5]      isoflavone [574-12-9]<br>  |

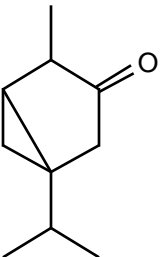
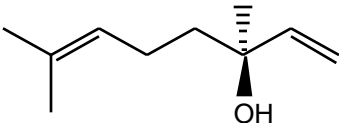
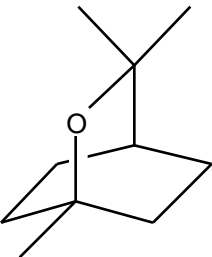
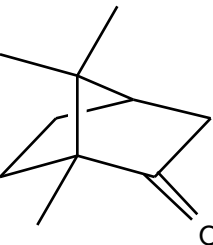
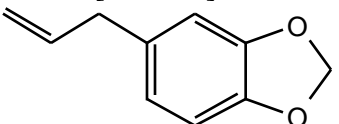
|                  |  |   |
|------------------|--|---|
| Rhubarb, chinese | Rheum palmatum<br>Rheum officinale<br>(root) | <p>rhein (rhubarb yellow, cassic acid, rheic acid) [478-43-3]</p>  <p>sennoside [517-43-1]</p>   |
|------------------|--|---|

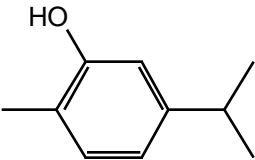
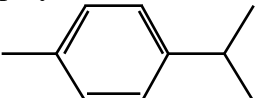
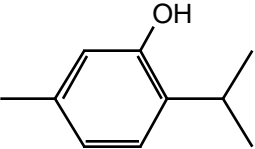
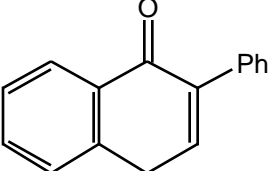
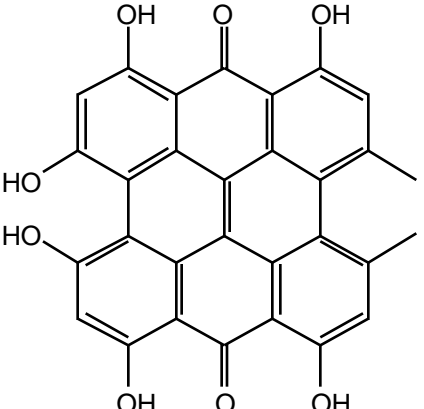
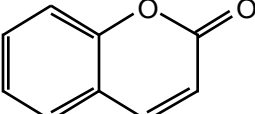
|                  |  |   |  |
|------------------|--|---|--|
| Rhubarb, chinese | Rheum palmatum<br>Rheum officinale<br>(root) | emodin [518-82-1]<br> | cyanidin [528-58-5]<br> |
|------------------|--|---|--|

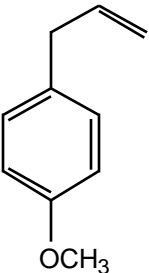
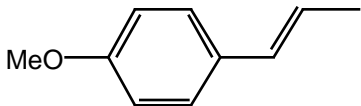
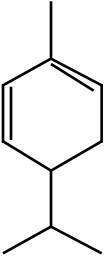
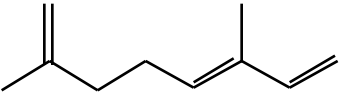
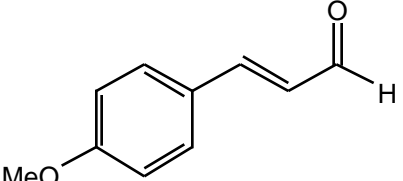
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|-----------|---------------------------------|---|---|
| Rosemary  | Rosmarinus officinalis (leaves) | <p>(±)-<math>\alpha</math>-pinene [80-56-8]</p>  <p>(+)-camphene [5794-03-6]</p>  <p>rosmarinic acid [20283-92-5]</p>  | <p>(+)-linalool (coriandrol) [126-90-9]</p>  <p>verbenone [18309-32-5]</p>  |
| Safflower | Carthamus tinctorius            |   |   |

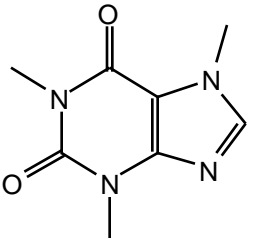
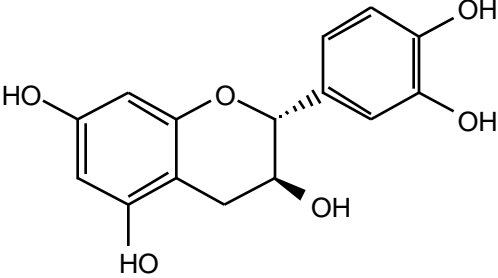
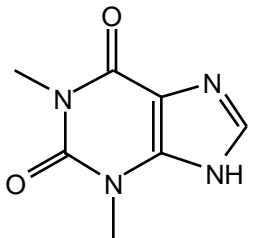
|         |                         |   |
|---------|-------------------------|---|
| Saffron | Crocus sativus (stigma) | <p>safranal (2,2,6-trimethyl-1,3-cyclohexadiene-1-carboxyaldehyde) [116-26-7]</p>  <p>2,6,6-trimethyl-2-cyclohexen-1,4-dione (4-ketoisophorone) [1125-21-9]</p>  <p>isophorone (3,5,5-trimethyl-2-cyclohexen-1-one) [78-59-1]</p>  <p>picrocrocin [138-55-6]</p>  |
|---------|-------------------------|---|

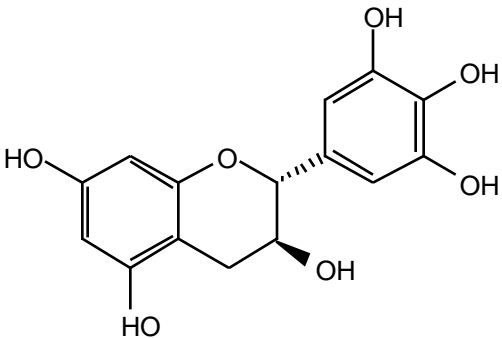
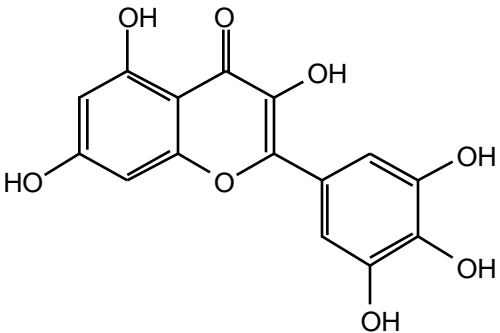
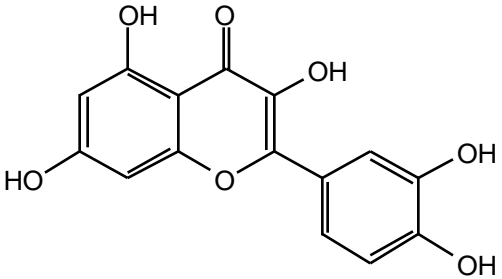
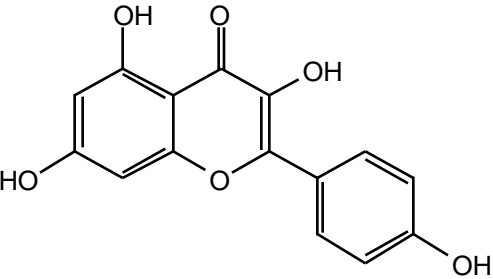
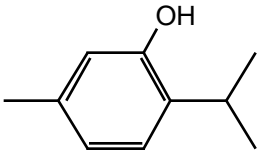
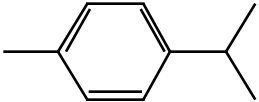
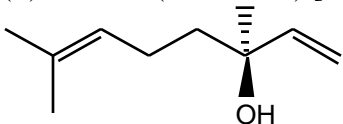


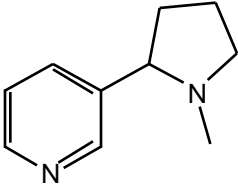
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|-----------|---|---|--|
| Sage      | Salvia officinalis<br>(leaves)                      | <p>(±)-thujone [1125-12-8]</p>  <p>(+)-linalool (coriandrol) [126-90-9]</p>  | <p>eucalyptol (1,8-cineole) [470-82-6]</p>  <p>(+)-camphor [464-49-3]</p>  |
| Sassafras | Sassafras albidum<br>Sassafras officinale<br>(bark) | <p>safrole [94-59-7]</p>   |  |

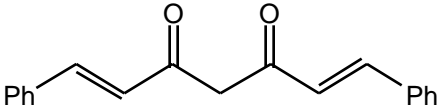
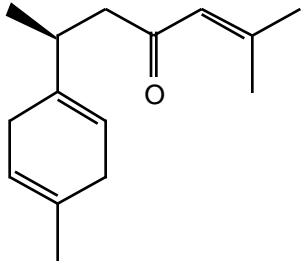
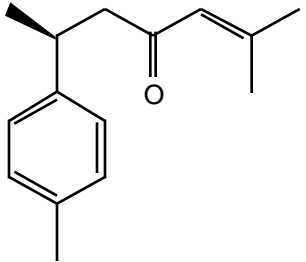
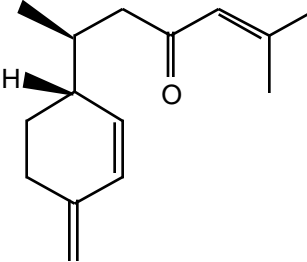
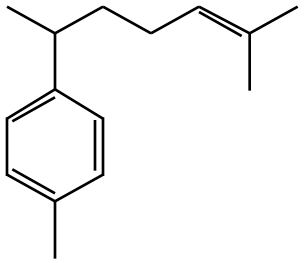
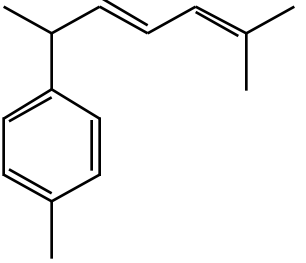
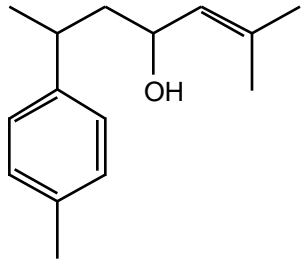
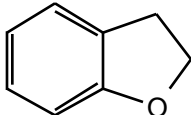
|                 |                       |  |   |
|-----------------|-----------------------|--|---|
| Savory          | Satureja hortensis    | carvacrol [499-75-2]<br><br>p-cymene [99-87-6]<br> | thymol [89-83-8]<br> |
| Soy             | Glycine max (bean)    | isoflavone [574-12-9]<br>  |   |
| St. John's Wort | Hypericum perforatum  | hypericin [548-04-9]<br>  |   |
| Sweet clover    | Melilotus officinalis | coumarin [91-64-5]<br>   |   |

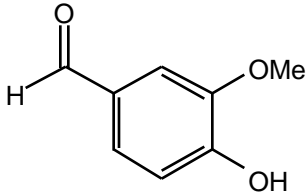
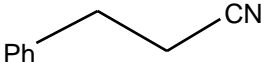
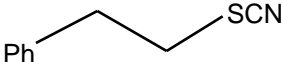
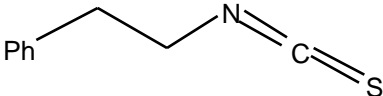
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| Tarragon | Artemisia dracunculus | <p>estragole (4-allylanisole, methyl chavicol) [140-67-0]    anethole [104-46-1]</p>   <p>ocimene [502-99-8]    (±)-α-phellandrene [99-83-2]</p>   <p>p-methoxycinnamic aldehyde [1504-74-1]</p>  |
|----------|-----------------------|--|

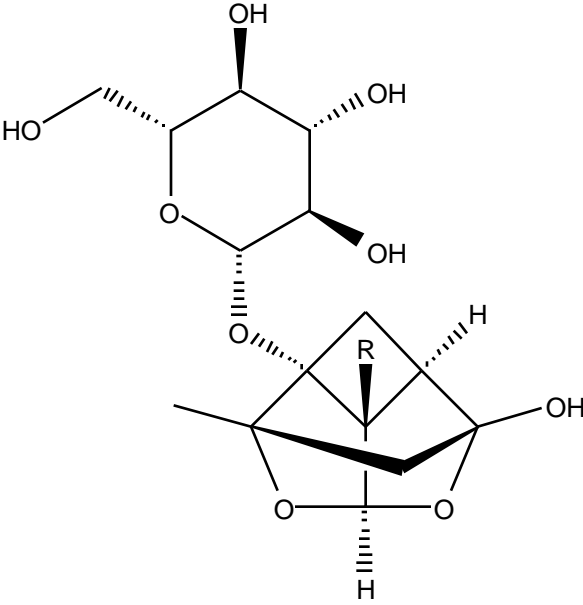
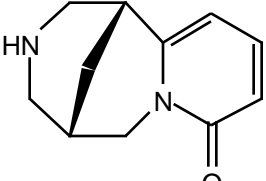
|     |                                    |   |   |
|-----|------------------------------------|---|---|
| Tea | Camellia sinensis<br>Thea sinensis | caffeine [58-08-2]<br><br>catechin [154-23-4]<br> | theophylline [58-55-9]<br> |
|-----|------------------------------------|---|---|

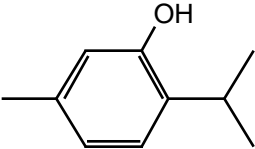
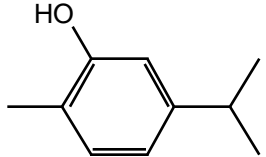
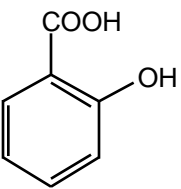
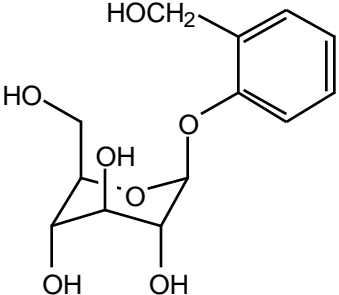
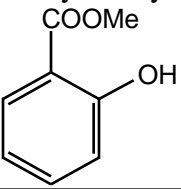
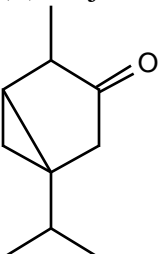
|       |                                    |  |  |
|-------|------------------------------------|--|--|
| Tea   | Camellia sinensis<br>Thea sinensis | gallocatechin [970-73-0]<br>               | myricetin [529-44-2]<br>  |
| Thyme | Thymus spp.<br>Thymus vulgaris     | quercetin [117-39-5]<br>                   | kaempferol [520-18-3]<br> |
|       |                                    | thymol [89-83-8]<br>                     | p-cymene [99-87-6]<br>  |
|       |                                    | (+)-linalool (coriandrol) [126-90-9]<br> |  |

|         |                   |   |
|---------|-------------------|---|
| Tobacco | Nicotiana tabacum | <p>(±)-nicotine [54-11-5]</p>  <p>The chemical structure of (±)-nicotine is shown, consisting of a pyridine ring connected to a pyrrolidine ring. The pyridine ring is a six-membered aromatic ring with one nitrogen atom at the bottom position. The pyrrolidine ring is a five-membered saturated ring with one nitrogen atom at the bottom position, which is substituted with a methyl group. The two rings are connected at the 3-position of the pyridine ring.</p> <chem>CN1CCCC1c2cccnc2</chem> |
|---------|-------------------|---|

|          |  |   |
|----------|--|---|
| Turmeric | <p>Curcuma longa<br/>Curcuma domestica<br/>Curcuma aromatica</p> | <p>curcumin [458-37-7]</p>  <p>turmerone [56485-42-8]</p>  <p>(+)-ar-turmerone [532-65-0]</p>  <p>curlone [87440-60-6]</p>  <p>(±)-ar-curcumene [644-30-4]</p>  <p>dehydrocurcumene</p>  <p>ar-turmerol [38142-57-3]</p>  <p>coumaran [496-16-2]</p>  |
|----------|--|---|

|            |                       |  |
|------------|-----------------------|--|
| Vanilla    | Vanilla plantifolia   | vanillin [121-33-5]<br>  |
| Watercress | Nasturtium officinale | 2-phenylethyl nitrile [645-59-0]      2-phenylethyl thiocyanate [5654-72-8]<br><br><br>2-phenylethyl isothiocyanate [2257-09-2]<br> |

|                  |                         |  |
|------------------|-------------------------|--|
| White peony root | Paeonia albiflora       | <p>paeoniflorin [23180-57-6]</p>  <p>R = CH<sub>2</sub>O(CO)Ph</p> |
| Wild cherry      | Prunus serotina         | prunisin   |
| Wild ginger      | Asarum canadense (root) |  |
| Wild indigo      | Baptisia tinctoria      | <p>baptitoxine [485-35-8]</p>  <p>baptin [1395-23-9]</p>         |

|                            |  |  |   |
|----------------------------|--|--|---|
| Wild marjoram<br>(oregano) | Origanum vulgare<br>(Mediterranean)<br>Lippia graveolens,<br>Lippia berlandieri<br>(Mexican) | thymol [89-83-8]<br>             | carvacrol [499-75-2]<br> |
| Willow herb plant          | Epilobium spp.   | ellagitannin   |   |
| Willow                     | Salix spp. (bark)  | salicylic acid [69-72-7]<br>      | salicin [138-52-3]<br>   |
| Wintergreen                | Gaultheria procumbens<br>Pyrola spp.<br>Gaultheria spp.                                      | methyl salicylate [119-36-8]<br> |   |
| Yarrow                     | Achillea millefolium   | (±)-thujone [1125-12-8]<br>     |   |

|         |  |  |
|---------|--|--|
| Yohimbe | Pausinystalia<br>yohimbe<br>Corynanthe yohimbe<br>(bark) |  |
|---------|--|--|

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