

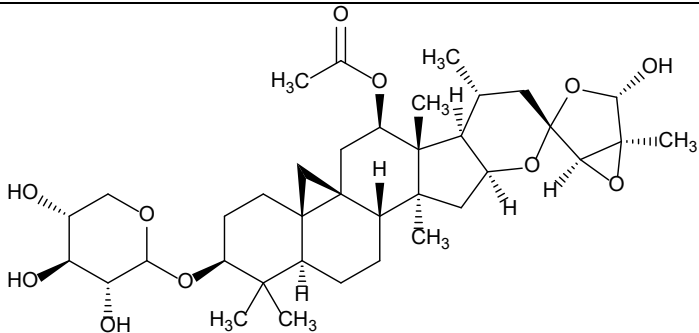
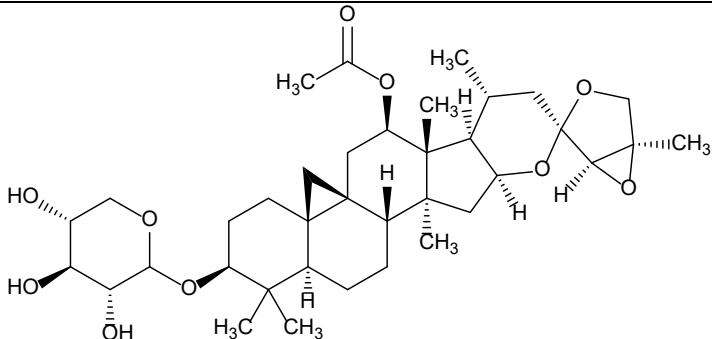


# Certificate

## POWDERED BLACK COHOSH EXTRACT

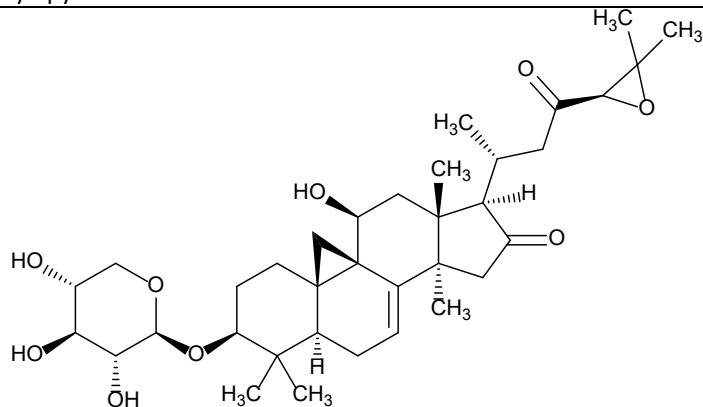
USP Catalog No.: 1076206

USP Lot No.: R192M0

N/A	CAS Number:	84776-26-1
	Molecular Formula:	N/A
	Molecular Weight:	N/A
<i>Only compendial components as listed in the monograph are shown below.</i>		
<b>(26S)-Actein (Actein);</b> ((3 $\beta$ ,12 $\beta$ ,16 $\beta$ ,23R,24R,25S,26S)-12-(Acetyloxy)-16,23:23,26:24,25-triepoxy-26-hydroxy-9,19-cyclolanostan-3-yl $\beta$ -D-xylopyranoside)		
	CAS Number:	18642-44-9
	Molecular Formula:	C <sub>37</sub> H <sub>56</sub> O <sub>11</sub>
	Molecular Weight:	676.84
<b>23-<i>epi</i>-26-Deoxyactein;</b> (3 $\beta$ ,12 $\beta$ ,16 $\beta$ ,23R,24R,25R)-12-(Acetyloxy)-16,23:23,26:24,25-triepoxy-9,19-cyclolanostan-3-yl $\beta$ -D-xylopyranoside)		
	CAS Number:	501938-01-8
	Molecular Formula:	C <sub>37</sub> H <sub>56</sub> O <sub>10</sub>
	Molecular Weight:	660.85



**Cimicifugoside H-1;** (3 $\beta$ ,11 $\beta$ ,24*R*)-24,25-Epoxy-11-hydroxy-16,23-dioxy-9,19-cyclolanost-7-en-3-yl  $\beta$ -D-xylopyranoside

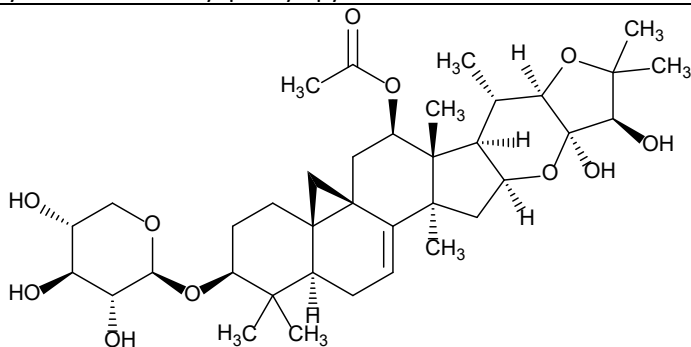


CAS Number: 163046-73-9

Molecular Formula: C<sub>35</sub>H<sub>52</sub>O<sub>9</sub>

Molecular Weight: 616.79

**Cimiracemoside A;** (3 $\beta$ ,12 $\beta$ ,16 $\beta$ ,22*R*,23*R*,24*R*)-12-Acetyloxy-16,23:22,25-diepoxy-23,24-dihydroxy-9,19-cyclolanost-7-en-3-yl  $\beta$ -D-xylopyranoside

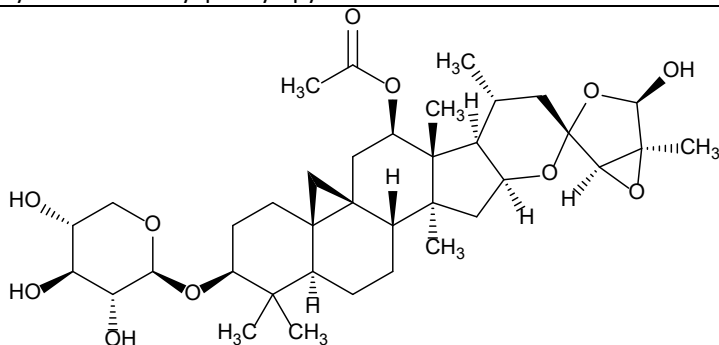


CAS Number: 264875-61-8

Molecular Formula: C<sub>37</sub>H<sub>56</sub>O<sub>11</sub>

Molecular Weight: 676.84

**(26*R*)-Actein;** (3 $\beta$ ,12 $\beta$ ,16 $\beta$ ,23*R*,24*R*,25*S*,26*R*)-12-(Acetyloxy)-16,23:23,26:24,25-triepoxy-26-hydroxy-9,19-cyclolanostan-3-yl  $\beta$ -D-xylopyranoside



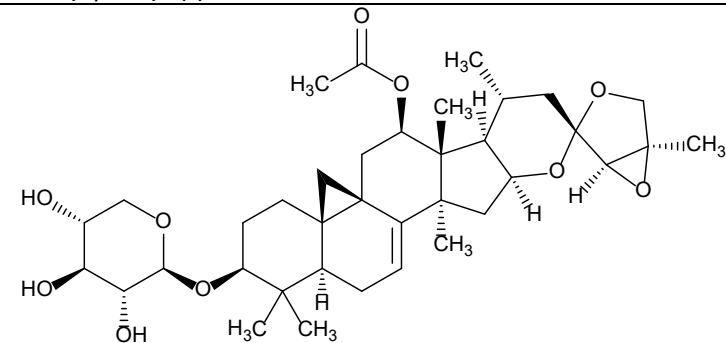
CAS Number: 947160-03-4

Molecular Formula: C<sub>37</sub>H<sub>56</sub>O<sub>11</sub>

Molecular Weight: 676.84



**26-Deoxycimicifugoside;** (3 $\beta$ ,12 $\beta$ ,16 $\beta$ ,23S,24R,25R)-12-(Acetyloxy)-16,23:23,26:24,25-triepoxy-9,19-cyclolanost-7-en-3-yl  $\beta$ -D-xylopyranoside

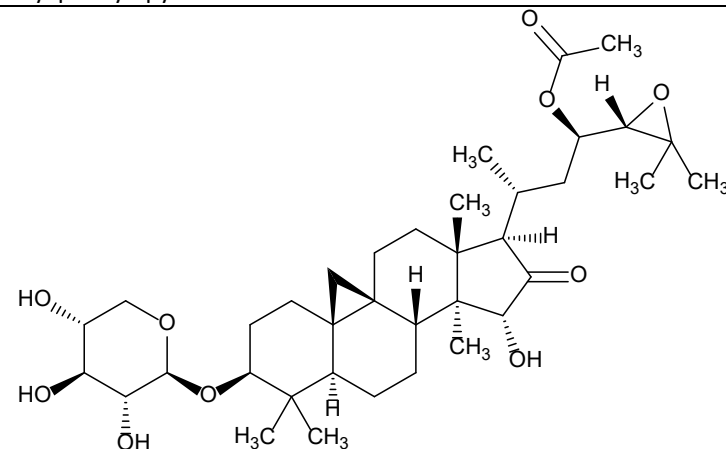


CAS Number: 214146-75-5

Molecular Formula: C<sub>37</sub>H<sub>54</sub>O<sub>10</sub>

Molecular Weight: 658.83

**Acetyl-shengmanol-xyloside;** (3 $\beta$ ,15 $\alpha$ ,23R,24S)-23-Acetyloxy-24,25-epoxy-15-hydroxy-16-oxy-9,19-cyclolanostan-3-yl  $\beta$ -D-xylopyranoside

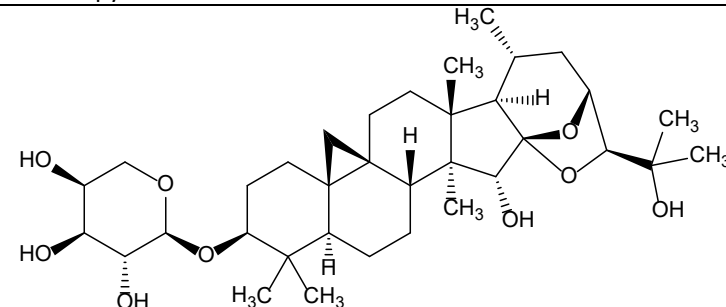


CAS Number: 62498-88-8

Molecular Formula: C<sub>37</sub>H<sub>58</sub>O<sub>10</sub>

Molecular Weight: 662.86

**Cimigenol-arabinoside;** (3 $\beta$ ,15 $\alpha$ ,16 $\alpha$ ,23R,24S)-16,23:16,24-Diepoxy-15,25-dihydroxy-9,19-cyclolanostan-3-yl  $\alpha$ -L-arabinopyranoside

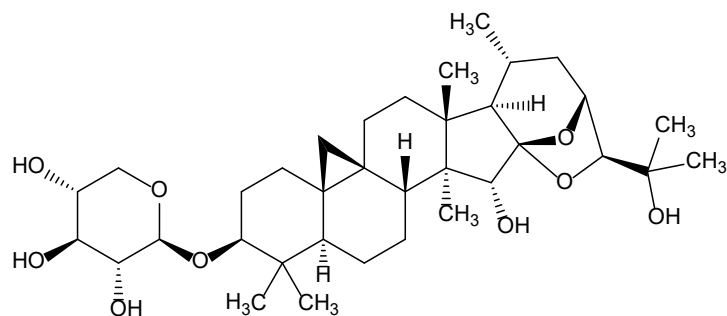


CAS Number: 256925-92-5

Molecular Formula: C<sub>35</sub>H<sub>56</sub>O<sub>9</sub>

Molecular Weight: 620.82

**Cimigenol-xyloside (Cimicifugoside);** (3 $\beta$ ,15 $\alpha$ ,16 $\alpha$ ,23*R*,24*S*)-16,23:16,24-Diepoxy-15,25-dihydroxy-9,19-cyclolanostan-3-yl  $\beta$ -D-xylopyranoside

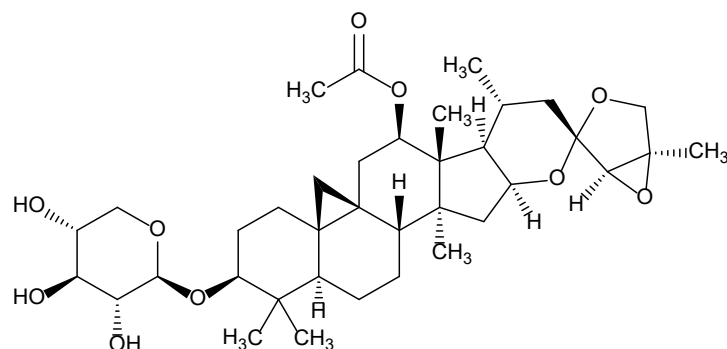


CAS Number: 27994-11-2

Molecular Formula: C<sub>35</sub>H<sub>56</sub>O<sub>9</sub>

Molecular Weight: 620.82

**26-Deoxyactein;** (3 $\beta$ ,12 $\beta$ ,16 $\beta$ ,23*S*,24*R*,25*R*)-12-(Acetyloxy)-16,23:23,26:24,25-triepoxy-9,19-cyclolanostan-3-yl  $\beta$ -D-xylopyranoside

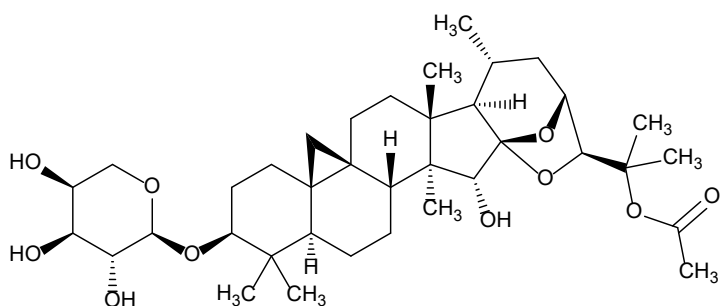


CAS Number: 264624-38-6

Molecular Formula: C<sub>37</sub>H<sub>56</sub>O<sub>10</sub>

Molecular Weight: 660.85

**25-Acetyl-cimigenol-arabinoside;** (3 $\beta$ ,15 $\alpha$ ,16 $\alpha$ ,23*R*,24*S*)-25-Acetoxy-16,23:16,24-diepoxy-15-hydroxy-9,19-cyclolanostan-3-yl  $\alpha$ -L-arabinopyranoside



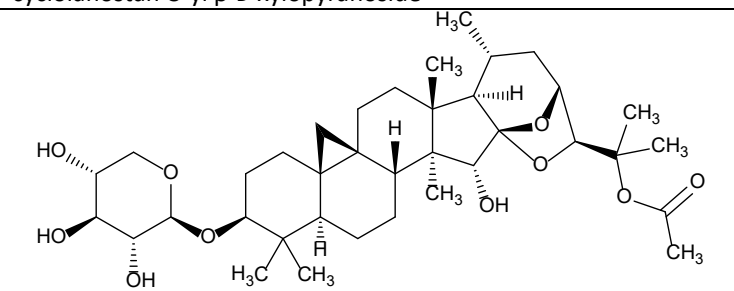
CAS Number: 256925-93-6

Molecular Formula: C<sub>37</sub>H<sub>58</sub>O<sub>10</sub>

Molecular Weight: 662.86



**(24S)-25-Acetyl-cimigenol-xyloside;** (3 $\beta$ ,15 $\alpha$ ,16 $\alpha$ ,23R,24S)-25-Acetoxy-16,23:16,24-diepoxy-15-hydroxy-9,19-cyclolanostan-3-yl  $\beta$ -D-xylopyranoside

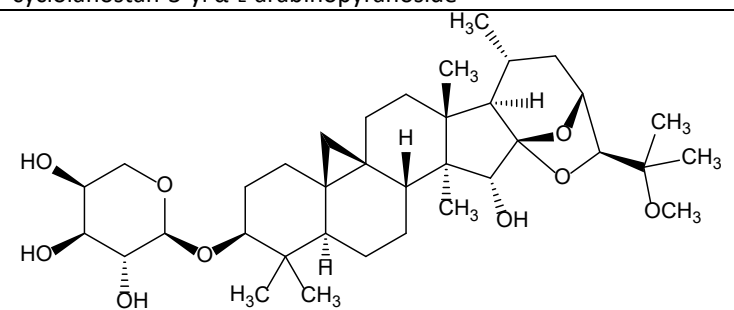


CAS Number: 27994-11-2

Molecular Formula: C<sub>37</sub>H<sub>58</sub>O<sub>10</sub>

Molecular Weight: 662.86

**25-O-Methyl-cimigenol-arabinoside;** (3 $\beta$ ,15 $\alpha$ ,16 $\alpha$ ,23R,24S)-16,23:16,24-Diepoxy-15-hydroxy-25-methoxy-9,19-cyclolanostan-3-yl  $\alpha$ -L-arabinopyranoside

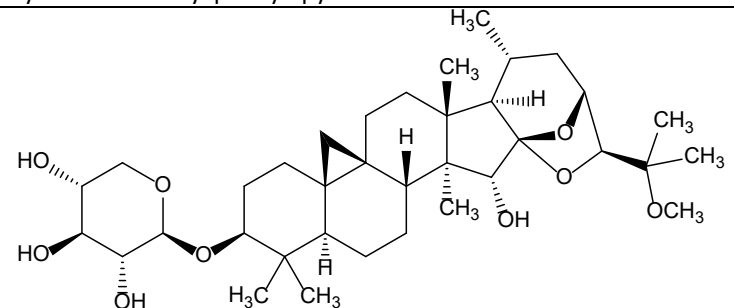


CAS Number: 343249-40-1

Molecular Formula: C<sub>36</sub>H<sub>58</sub>O<sub>9</sub>

Molecular Weight: 634.85

**25-O-Methyl-cimigenol-xyloside;** (3 $\beta$ ,15 $\alpha$ ,16 $\alpha$ ,23R,24S)-16,23:16,24-Diepoxy-15-hydroxy-25-methoxy-9,19-cyclolanostan-3-yl  $\beta$ -D-xylopyranoside



CAS Number: 27994-13-4

Molecular Formula: C<sub>36</sub>H<sub>58</sub>O<sub>9</sub>

Molecular Weight: 634.85

#### Additional Information:

25-O-Methyl-cimigenol-arabinoside and 25-O-Methyl-cimigenol-xyloside peaks are not detected, therefore, not labeled in the Typical chromatogram. Components of interest can be identified by the RRTs as listed in the monograph Table.

**LABEL TEXT**

For use with specified USP compendial tests. Not for use as a drug. See SDS prior to use at [www.usp.org/sds](http://www.usp.org/sds).



Lot: R192M0

**REFERENCE STANDARD****POWDERED BLACK COHOSH EXTRACT 1.5 g**

Labeled for compendial qualitative use. Keep container tightly closed. Store in a refrigerator. Material is hygroscopic.

See certificate for any additional information.

USP, 12601 Twinbrook Pkwy, Rockville, MD, +1-301-881-0666  
Cat. No. 1076206 Material mfd. in Germany

*Danielle A. Vattimo*

*Quality Assurance*

**Certificate Version History**

Version Number	Date	Reasons for Change
00 (Current)	08-AUG-2023	First issue

**Assigned Value**

Please refer to the USP Reference Standard label and/or USP Certificate for the assigned value of the specific lot. If an assigned value is not included on the label or Certificate, the lot was developed for qualitative USP compendial use and an assigned value will not be provided.

**Valid Use Date**

It is the responsibility of the user to ascertain that a particular lot of a USP Reference Standard has official status either as a "Current Lot" or as a "Previous Lot" within the assigned valid use date. The online USP Reference Standards Catalog and the online USP Store at [www.usp.org](http://www.usp.org) are updated daily. USP recommends referring to one of these sources prior to using a USP RS to make sure the lot is valid for use.

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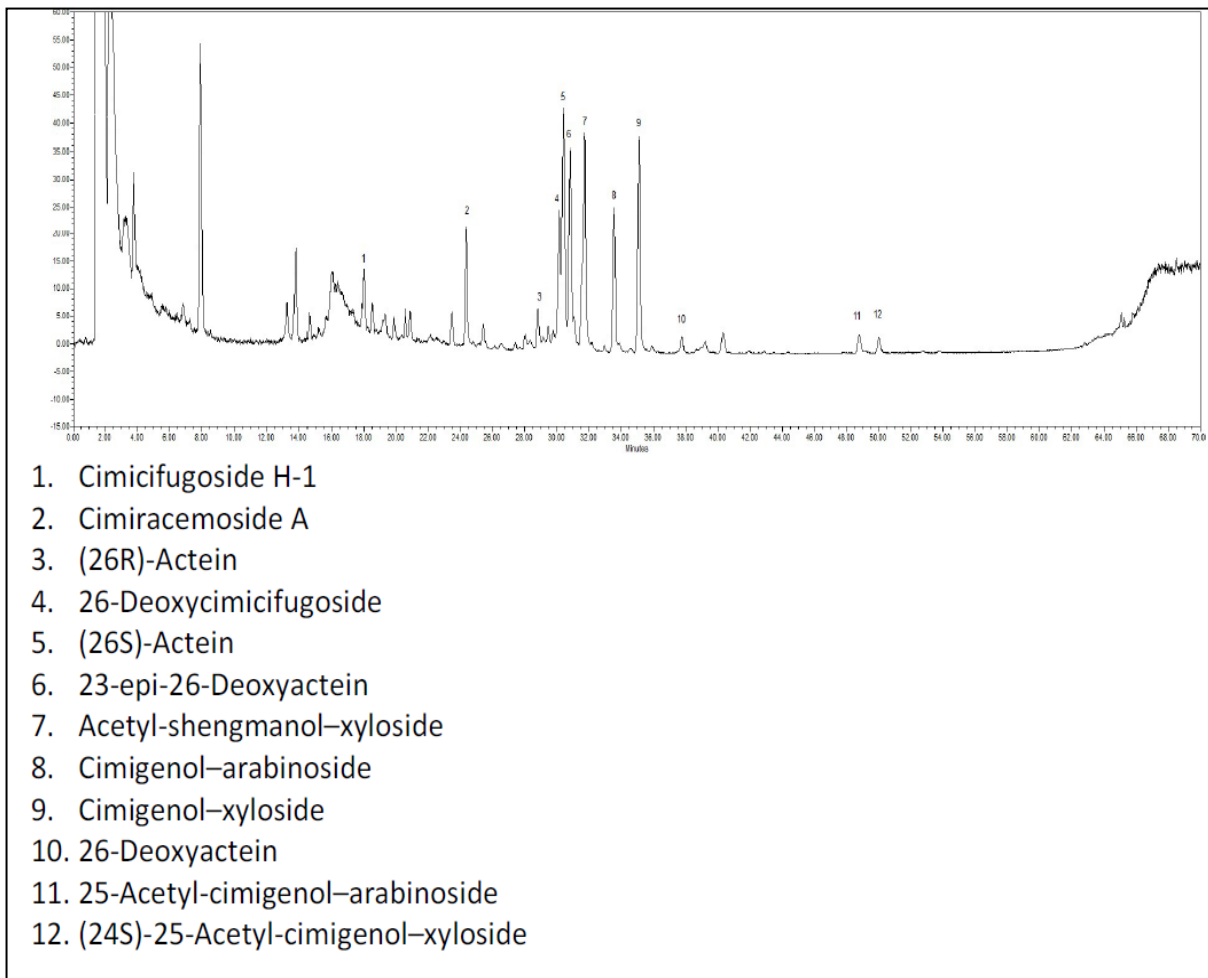
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# Typical Chromatogram

## USP Powdered Black Cohosh Extract RS

<b>Catalog Number:</b> 1076206
<b>Lot:</b> R192M0
<b>Monograph:</b> Powdered Black Cohosh Extract
<b>Publication:</b> USP-NF 2023, Issue 1
<b>Test:</b> Content of Triterpene Glycosides
<b>Sample:</b> Standard Solution



This chromatogram is supplied for information only, unless otherwise specified in an applicable monograph or general chapter.