



Optical Rotation: $[\alpha]_{\text{D}}^{25} +40.96$ (c, 0.5 in Py)

>> **Derivative:** 3-*O*-β-D-Glucuronopyranoside

Synonym(s): Calendulose E. Momordin Ib. Calendulaglycoside F

CAS Registry Number: 26020-14-4

Molecular Formula: C₃₆H₅₆O₉

Molecular Weight: 632.833

Accurate Mass: 632.392435

Percentage Composition: C 68.33%; H 8.92%; O 22.75%

Biological Source: Constit. of *Melanthera scandens*, *Aralia armata*, *Calendula officinalis*, *Beta vulgaris*, *Hedera nepalensis* and *Momordica cochinchinensis*

Physical Description: Needles (MeOH)

Melting Point: Mp 264-267 dec.°

Optical Rotation: $[\alpha]_{\text{D}} +20.4$ (c, 0.8 in MeOH)

>> **Derivative:** 3-*O*-β-D-Glucuronopyranoside, 6'-Me ester

CAS Registry Number: 51724-38-0

Molecular Formula: C₃₇H₅₈O₉

Molecular Weight: 646.86

Accurate Mass: 646.408085

Percentage Composition: C 68.70%; H 9.04%; O 22.26%

Biological Source: Constit. of *Aralia armata* and *Fagonia mollis*

Physical Description: Amorph. powder

Optical Rotation: $[\alpha]_{\text{D}}^{22} -18.5$ (c, 1 in MeOH)

>> **Derivative:** 3-*O*-β-D-Glucuronopyranoside, 6'-butyl ester

CAS Registry Number: 164990-95-8

Molecular Formula: C₄₀H₆₄O₉

Molecular Weight: 688.94

Accurate Mass: 688.455035

Percentage Composition: C 69.74%; H 9.36%; O 20.90%

Biological Source: Constit. of *Aralia armata*

Physical Description: Powder

>> **Variant:** Diglycosides

>> **Derivative:** 3-*O*-[[1*S*-(Carboxymethoxy)carboxymethyl]-(-→3)-β-D-glucuronopyranoside]

Synonym(s): Spinacose D

CAS Registry Number: 182322-58-3

Molecular Formula: C₄₀H₆₀O₁₄

Molecular Weight: 764.906

Accurate Mass: 764.39831

Percentage Composition: C 62.81%; H 7.91%; O 29.28%

Biological Source: Constit. of *Spinacia oleracea*, *Basella rubra* and *Pisonia umbellifera*

Physical Description: Cryst. (MeOH aq.)

Melting Point: Mp 183-185°

Optical Rotation: $[\alpha]_{\text{D}}^{25} +11.4$ (MeOH). $[\alpha]_{\text{D}} +10.7$ (c, 0.2 in CD₃OD)

>> **Derivative:** 3-*O*-[[2-Carboxy-1-(carboxymethoxy)-2-hydroxyethyl]-(-→3)-β-D-glucuronopyranoside]

Synonym(s): Betavulgaroside IV

CAS Registry Number: 168010-06-8