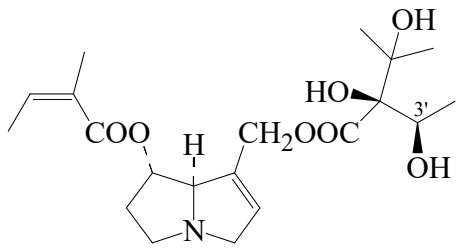
>>**Entry Name: Heliosupine**
**Synonym(s):** Cynoglossophine. Asperumine




**CAS Registry Number:** 32728-78-2
**Extra CAS Registry Numbers(s):** 32779-96-7

**Molecular Formula:** $C_{20}H_{31}NO_7$
**Molecular Weight:** 397.467
**Accurate Mass:** 397.210054
**Percentage Composition:** C 60.44%; H 7.86%; N 3.52%; O 28.18%
**Biological Source:** Alkaloid from *Heliotropium supinum*, *Senecio asperum* and *Cynoglossum* spp. (Boraginaceae)
**Biological Use/Importance:** Shows antitumour activity
**Melting Point:** Mp 148-149°
**Optical Rotation:** $[\alpha]_D$ –4.3 (c, 5.1 in EtOH)
**Solubility:** BERDY SOL: Sol. MeOH, EtOH, $CHCl_3$; poorly sol. $H_2O$

>>**Derivative:** Picrate

**Physical Description:** Cryst. + $H_2O$
**Melting Point:** Mp 102-106° (97-100°)
**Other Data:** Dehydrates to a gum on drying *in vacuo*

>>**Derivative:** *N*-Oxide
**Synonym(s): Heliosupine *N*-oxide**

**CAS Registry Number:** 31701-88-9

**Molecular Formula:** $C_{20}H_{31}NO_8$
**Molecular Weight:** 413.467
**Accurate Mass:** 413.204969
**Percentage Composition:** C 58.10%; H 7.56%; N 3.39%; O 30.96%
**Biological Source:** Alkaloid from *Cynoglossum pictum* and *Paracynoglossum imeretinum*
**Melting Point:** Mp 165 dec.°

>>**Derivative:** 3'-Ac
**Synonym(s): Acetylheliosupine**

**CAS Registry Number:** 31514-30-4

**Molecular Formula:** $C_{22}H_{33}NO_8$
**Molecular Weight:** 439.505
**Accurate Mass:** 439.220619
**Percentage Composition:** C 60.12%; H 7.57%; N 3.19%; O 29.12%
**Biological Source:** Minor alkaloid from *Cynoglossum officinale* and from *Myosotis sylvatica* (Boraginaceae)
**Optical Rotation:** $[\alpha]_D^{24}$ –1.8 (c, 0.567 in EtOH)
**Other Data:** Acetylated at the secondary OH group. Originally considered to be the 2'-Ac deriv.

>>**Derivative:** 3'-Ac, *N*-oxide
**Synonym(s): 3'-Acetylheliosupine *N*-oxide**

**CAS Registry Number:** 147802-43-5

**Molecular Formula:** $C_{22}H_{33}NO_9$
**Molecular Weight:** 455.504
**Accurate Mass:** 455.215534
**Percentage Composition:** C 58.01%; H 7.30%; N 3.07%; O 31.61%
**Biological Source:** Alkaloid from aerial parts of *Heliotropium hirsutissimum* (Boraginaceae)
**Physical Description:** Oil
**Optical Rotation:** $[\alpha]_D^{20}$ +14.9 (c, 0.35 in $CHCl_3$)

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