



**Molecular Formula:** C<sub>48</sub>H<sub>78</sub>O<sub>18</sub>  
**Molecular Weight:** 943.133  
**Accurate Mass:** 942.51882  
**Percentage Composition:** C 61.13%; H 8.34%; O 30.54%  
**Biological Source:** Constit. of *Hovenia dulcis*  
**Physical Description:** Needles (MeOH)  
**Melting Point:** Mp 215-217°  
**Optical Rotation:** [ $\alpha$ ]<sub>D</sub><sup>22</sup> -31.4 (c, 4.3 in MeOH)

>> **Derivative:** 3-*O*-[ $\beta$ -D-Glucopyranosyl-(1 $\rightarrow$ 3)]- $\beta$ -D-glucopyranosyl-(1 $\rightarrow$ 2)]- $\alpha$ -L-arabinopyranoside]

**Synonym(s):** Hoduloside IV

**CAS Registry Number:** 146445-91-2

**Molecular Formula:** C<sub>47</sub>H<sub>76</sub>O<sub>18</sub>  
**Molecular Weight:** 929.107  
**Accurate Mass:** 928.50317  
**Percentage Composition:** C 60.76%; H 8.24%; O 31.00%  
**Biological Source:** Constit. of *Hovenia dulcis*  
**Physical Description:** Needles (MeOH)  
**Melting Point:** Mp 246-248°  
**Optical Rotation:** [ $\alpha$ ]<sub>D</sub><sup>22</sup> -12.9 (c, 3.5 in MeOH)

>> **Derivative:** 3-*O*-[ $\beta$ -D-Arabinopyranosyl-(1 $\rightarrow$ 3)]- $\beta$ -D-glucopyranosyl-(1 $\rightarrow$ 3)]- $\alpha$ -L-fucopyranosyl-(1 $\rightarrow$ 2)]- $\alpha$ -L-arabinopyranoside]

**Synonym(s):** Christinin D

**CAS Registry Number:** 177855-95-7

**Molecular Formula:** C<sub>52</sub>H<sub>84</sub>O<sub>21</sub>  
**Molecular Weight:** 1045.223  
**Accurate Mass:** 1044.550515  
**Percentage Composition:** C 59.75%; H 8.10%; O 32.15%  
**Biological Source:** Constit. of *Zizyphus spina-christi*

>> **Derivative:** 3-*O*-[ $\beta$ -D-Xylopyranosyl-(1 $\rightarrow$ 2)]- $\beta$ -D-glucopyranosyl-(1 $\rightarrow$ 3)]- $\beta$ -D-xylopyranosyl-(1 $\rightarrow$ 2)]- $\alpha$ -L-arabinopyranoside]

**Synonym(s):** Hovenoside G

**CAS Registry Number:** 55466-01-8

**Molecular Formula:** C<sub>51</sub>H<sub>82</sub>O<sub>21</sub>  
**Molecular Weight:** 1031.196  
**Accurate Mass:** 1030.534865  
**Percentage Composition:** C 59.40%; H 8.01%; O 32.58%  
**Biological Source:** Constit. of *Hovenia dulcis*  
**Physical Description:** Cryst.  
**Optical Rotation:** [ $\alpha$ ]<sub>D</sub> -26.4 (c, 1 in MeOH)

>> **Derivative:** 3-*O*-[ $\beta$ -D-Xylopyranosyl-(1 $\rightarrow$ 2)]- $\beta$ -D-glucopyranosyl-(1 $\rightarrow$ 3)]-[6-deoxy- $\alpha$ -L-talopyranosyl-(1 $\rightarrow$ 2)]- $\alpha$ -L-arabinopyranoside]

**Synonym(s):** Zizyphussaponin III

**CAS Registry Number:** 77943-54-5

**Molecular Formula:** C<sub>52</sub>H<sub>84</sub>O<sub>21</sub>  
**Molecular Weight:** 1045.223  
**Accurate Mass:** 1044.550515  
**Percentage Composition:** C 59.75%; H 8.10%; O 32.15%  
**Biological Source:** Constit. of *Zizyphus fractus*  
**Physical Description:** Cryst.  
**Melting Point:** Mp 229-233°  
**Optical Rotation:** [ $\alpha$ ]<sub>D</sub><sup>28</sup> -46.5 (c, 0.98 in MeOH)

>> **Derivative:** 3-*O*-[ $\beta$ -D-Xylopyranosyl-(1 $\rightarrow$ 2)]- $\beta$ -D-glucopyranosyl-(1 $\rightarrow$ 3)]- $\alpha$ -L-rhamnopyranosyl-(1 $\rightarrow$ 2)]- $\alpha$ -L-arabinopyranoside]

**Synonym(s):** Jujuboside B

**CAS Registry Number:** 55466-05-2