



3050 Spruce Street  
Saint Louis, Missouri 63103 USA  
Telephone 800-325-5832 • (314) 771-5765  
Fax (314) 286-7828  
email: techserv@sia.com  
sigma-aldrich.com

## Product Information

### Carbenoxolone disodium salt

Product Number **C 4790**

Storage Temperature 2-8 °C

#### Product Description

Molecular Formula:  $C_{34}H_{48}O_7Na_2$

Molecular Weight: 614.7

CAS Number: 7421-40-1

Synonyms: 3 $\beta$ -hydroxy-11-oxoolean-12-en-30-oic acid 3-hemisuccinate disodium; (3 $\beta$ ,20 $\beta$ )-3-(3-carboxy-1-oxopropoxy)-11-oxoolean-12-en-29-oic acid disodium; 3-O $9\beta$ -carboxypropionyl)-11-oxo-18 $\beta$ -olean-12-en-30-oic acid disodium<sup>1</sup>

Carbenoxolone is a glucocorticoid compound and glycyrrhizinic acid metabolite with anti-inflammatory properties and a noted binding affinity for albumin.<sup>1,2</sup> It is often used as a gap junction inhibitor in neuroscience research.<sup>3,4</sup> Carbenoxolone is also an inhibitor of the steroid dehydrogenase enzymes 11  $\beta$ -hydroxysteroid dehydrogenase (human) and 3 $\alpha$ , 20  $\beta$ -hydroxysteroid dehydrogenase (bacterial).<sup>5</sup>

An *in vivo* study in rats has indicated that carbenoxolone treatment of pregnant rats leads to decreased birth weight and the development of hypertension of the corresponding pups after birth.<sup>6</sup> Carbenoxolone has been used for uncoupling the network of light responsive units in a study of mouse rod and cone photoreceptors retinæ.<sup>7</sup> The suppression by carbenoxolone of the endogenous connexin (Cx38) hemichannel currents of *Xenopus* oocytes has been investigated.

#### Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

#### Preparation Instructions

This product is soluble in water (100 mg/ml), with heat as needed, yielding a very slightly hazy to slightly hazy, faint yellow solution.

#### References

1. The Merck Index, 12th ed., Entry# 1839.
2. Martindale The Extra Pharmacopoeia, 31st ed., Reynolds, J. E. F., ed., Royal Pharmaceutical Society (London, UK: 1996), p. 1839.
3. Ye, Z. C., et al., Functional hemichannels in astrocytes: a novel mechanism of glutamate release. *J. Neurosci.*, **23(9)**, 3588-3596 (2003).
4. Li, J., et al., Upregulation of gap junction connexin 32 with epileptiform activity in the isolated mouse hippocampus. *Neuroscience*, **105(3)**, 589-598 (2001).
5. Duax, W. L., et al., Steroid dehydrogenase structures, mechanism of action, and disease. *Vitam. Horm.*, **58**, 121-148 (2000).
6. Edwards, C. R., 11  $\beta$ -Hydroxysteroid dehydrogenases: key enzymes in determining tissue-specific glucocorticoid effects. *Steroids*, **61(4)**, 263-269 (1996).
7. Sekaran, S., et al., Calcium imaging reveals a network of intrinsically light-sensitive inner-retinal neurons. *Curr. Biol.*, **13(15)**, 1290-1298 (2003).

GCY/RXR 10/03

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.