

## Product Information

### Azadirachtin

Product Number **A 7430**

Storage Temperature -0 °C

#### Product Description

Molecular Formula: C<sub>35</sub>H<sub>44</sub>O<sub>16</sub>

Molecular Weight: 720.7

CAS Number: 11141-17-6

Melting point: 154-158 °C<sup>1</sup>

$\lambda_{\max}$ : 217 nm (methanol)<sup>1</sup>

Extinction coefficient: E<sup>mM</sup> = 9.1 (methanol)<sup>1</sup>

Specific rotation: -53° (5 mg/ml, chloroform, 25 °C)<sup>1</sup>

Azadirachtin is found in the seeds of the neem tree *Azadiracta indica* A. Juss (*Melia azadirachta* L.) and the chinaberry tree *Melia azedarach* L. The major constituent is azadirachtin A, and other isomers that may be present include azadirachtin B, H, and J. Azadirachtin has structural similarity to the class of insect hormones known as ecdysones and has been studied as an insect feeding inhibitor and growth regulator.<sup>1</sup> Azadirachtin has been shown to disrupt mitosis in cultured insect Sf9 cells.<sup>2</sup> The binding of azadirachtin to Sf9 nuclei *in vitro* has been investigated.<sup>3</sup>

Microscopy studies have indicated that azadirachtin interferes with the formation of mitotic spindles and with the assembly of microtubules into axonemes during microgametogenesis of *Plasmodium berghei*.<sup>4</sup> The cytotoxicity of azadirachtin A in several cultured human glioblastoma cell lines has been examined.<sup>5</sup>

A protocol for the supercritical extraction of azadirachtin from neem seeds that uses supercritical and liquid carbon dioxide has been reported.<sup>6</sup> A method has been described for the analysis by LC-ESI-MS-MS of azadirachtin in orange samples.<sup>7</sup> An reversed-phase HPLC/atmospheric pressure chemical ionization (APCI) MS method for the analysis of azadirachtin and related tetranortriterpenoids from neem seeds and tissue culture has been published.<sup>8</sup>

#### Precautions and Disclaimer

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

#### Preparation Instructions

This product is soluble in chloroform (10 mg/ml), yielding a clear, colorless solution.

#### References

1. The Merck Index, 12th ed., Entry# 926.
2. Salehzadeh, A., et al., The antimetabolic effect of the neem terpenoid azadirachtin on cultured insect cells. *Insect Biochem. Mol. Biol.*, **33(7)**, 681-689 (2003).
3. Nisbet, A. J., et al., Characterization of azadirachtin binding to Sf9 nuclei *in vitro*. *Arch. Insect Biochem. Physiol.*, **46(1-2)**, 78-86 (2001).
4. Billker, O., et al., Azadirachtin disrupts formation of organised microtubule arrays during microgametogenesis of *Plasmodium berghei*. *J. Eukaryot. Microbiol.*, **49(6)**, 489-497 (2002).
5. Akudugu, J., et al., Cytotoxicity of azadirachtin A in human glioblastoma cell lines. *Life Sci.*, **68(10)**, 1153-1160 (2001).
6. Ambrosino, P., et al., Extraction of azadirachtin A from neem seed kernels by supercritical fluid and its evaluation by HPLC and LC/MS. *J. Agric. Food Chem.*, **47(12)**, 5252-5256 (1999).
7. Pozo, O. J., et al., Determination of abamectin and azadirachtin residues in orange samples by liquid chromatography-electrospray tandem mass spectrometry. *J. Chromatogr. A*, **992(1-2)**, 133-140 (2003).
8. Schaaf, O., et al., Rapid and sensitive analysis of azadirachtin and related triterpenoids from Neem (*Azadirachta indica*) by high-performance liquid chromatography-atmospheric pressure chemical ionization mass spectrometry. *J. Chromatogr. A*, **886(1-2)**, 89-97 (2000).

GCY/RXR 11/03

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