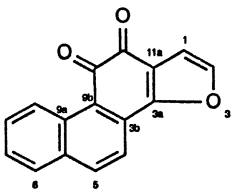
Salvia miltiorrhiza Bge. 110

110.1 Introduction

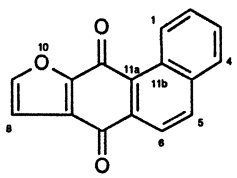
Danshen, Radix Salviae miltiorrhizae, is the dry root and rhizome of *Salvia miltiorrhiza* Bge. (Lamiaceae), collected in spring and fall. It is officially listed in the Chinese Pharmacopoeia and used for treatment of menstrual disorder, menostasis, menorrhalgia, insomnia, blood circulation diseases, and angina pectoris as well as against inflammation.

110.2 Chemical Constituents

The major chemical constituents of the root of *S. miltiorrhiza* are diterpene pigments with a phenanthrenequinone structure, especially phenanthrofurane quinone derivatives. They have been classified into two series, a phenanthro[1,2-*b*]furan-10,11-dione (*110-1*) series and a phenanthro[3,2-*b*]furan-7,11-dione (*110-2*) series.

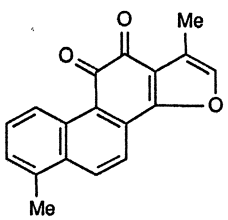


Phenanthro[1,2-*b*]-furan-10,11-dione (*110-1*)

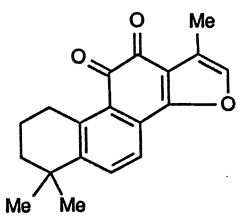


Phenanthro[3,2-*b*]-furan-7,11-dione (*110-2*)

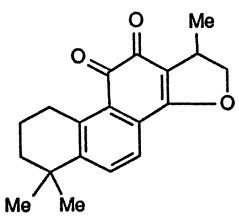
Tanshinones I and II, cryptotanshinone, and the tanshindiols belong to the phenanthro[1,2-*b*]furan-10,11-dione derivatives, whereas the isotanshinones are derivatives of phenanthro[3,2-*b*]furan-7,11-dione. Studies on chemical components of the roots of *S. miltiorrhiza* began more than 50 years ago. The presence of a group of orange-red pigments was first reported in 1934 [1]. Later, structures of isolated pigments tanshinone I (*110-3*) [2], tanshinone II (*110-4*) [3], and cryptotanshinone (*110-5*) [4] were determined.



Tanshinone I (*110-3*)



Tanshinone II (*110-4*)



Cryptotanshinone (*110-5*)