TOTAL SYNTHESIS OF (±)-SARUBICIN A (U-58,431)

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The first total synthesis of sarubicin A (antibiotic U-58,431) (1), which involves an efficient and stereoselective construction of the oxabicyclic ring system, has been achieved.

The suitably functionalized bromotetralone(5) derived from the succinoylbenzene(2) was converted into the methylcarbinol(7) via the allyl alcohol(6). The cyano octalin derivative(8) prepared from 7 was subjected to catalytic osmylation to give the triol(9) stereoselectively. O-Trimethylsilation of 9 followed by bromination with NBS and then dehydrobromination with $AgClO_4$ afforded the oxabicyclic compound(11) in excellent yield. The carboxamide(12) obtained from 11 was selectively demethylated with MeSLi/DMF to produce the monomethyl ether(13), which was treated with CAN and NH_3 to give the target molecule(1) in high yield.