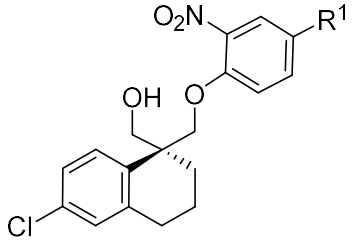
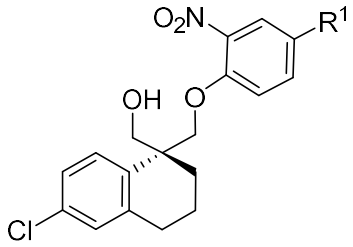
examples, compound Y can have the stereochemistry as shown in compound Y1

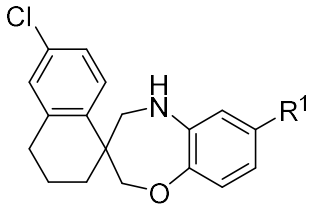


(Y1). In various examples, compound Y can have the stereochemistry as shown in compound Y2

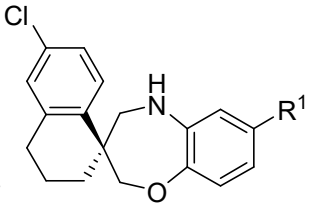


(Y2).

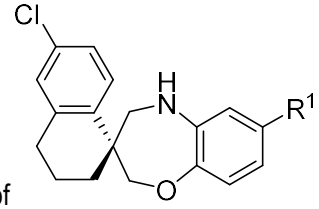
[0010] In various examples, compound Y is used to synthesize compound A3 or a salt or solvate thereof



(A3). In various examples, compound Y1 is used to synthesize compound A3A or a salt or solvate thereof

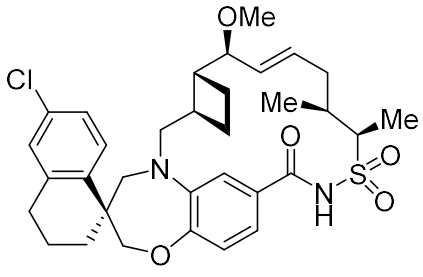


(A3A). In various examples, compound Y is used to synthesize compound A3B or a salt or solvate thereof



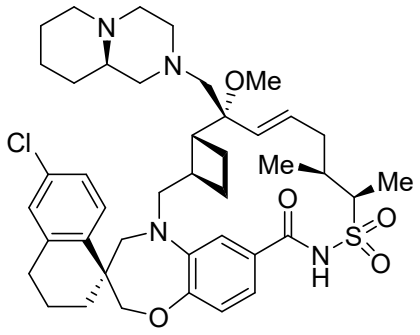
(A3B).

[0011] In various examples, compound Y1 is used to synthesize Compound A1 or a salt or solvate thereof



(A1).

[0012] In various examples, compound Y1 is used to synthesize Compound A2 or a salt or solvate thereof

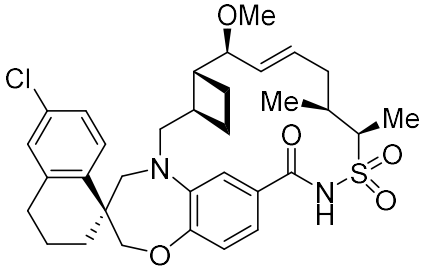


(A2).

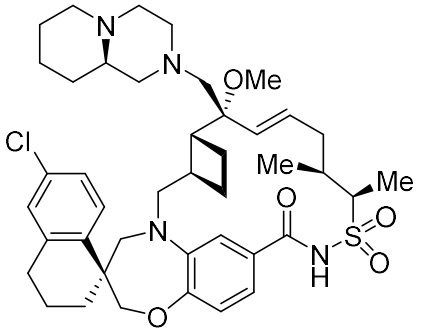
[0013] Further examples and advantages will be apparent to those of ordinary skill in the art from a review of the following detailed description. The description hereafter includes specific examples with the understanding that the disclosure is illustrative, and is not intended to limit the disclosure to the specific examples described herein.

DETAILED DESCRIPTION

[0014] Provided herein are processes for synthesizing Mcl-1 inhibitors and corresponding Mcl-1 inhibitor intermediates. In particular, the intermediates can be used in processes for synthesizing (1S,3'R,6'R,7'S,8'E,11'S,12'R)-6-chloro-7'-methoxy-11',12'-dimethyl-3,4-dihydro-2H,15'H-spiro[naphthalene-1,22'[20]oxa[13]thia[1,14]diazatetracyclo[14.7.2.$0^{3,6}$.$0^{19,24}$]pentacosa [8,16,18,24]tetraen]-15'-one 13',13'-dioxide (compound A1), or a salt or solvate thereof and for synthesizing (1S,3'R,6'R,7'R,8'E,11'S,12'R)-6-chloro-7'-methoxy-11',12'-dinethyl-7'-((9aR)-octahydro-2H-pyrido[1,2-a]pyrazin-2-ylmethyl)-3,4-dihydro-2H,15'H-spiro[naphthalene-1,22'-[20]oxa[13]thia[1,14]diazatetracyclo [14.7.2.$0^{3,6}$.$0^{19,24}$]pentacosa[8,16,18,24]tetraen]-15'-one 13',13'-dioxide (compound A2), or a salt or solvate thereof are provided:



(A1),



(A2).

[0015] U.S. Patent No. 9,562,061, which is incorporated herein by reference in its entirety, discloses compound A1, or a salt or solvate thereof, as an Mcl-1 inhibitor and provides a process for preparing it. U.S. Patent No. 9,562,061