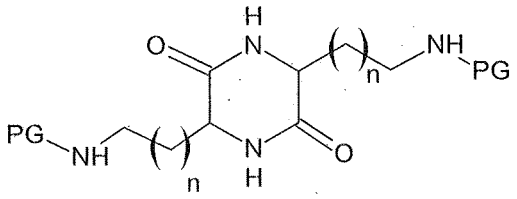
What is claimed is:

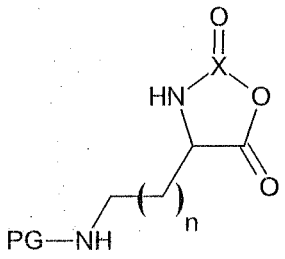
Claim 1. A method for the synthesis of a ~~bis~~ N-protected bis-3,6-aminoalkyl-2,5-diketopiperazine of Formula I,



Formula I

wherein PG is selected from CBz, Boc, trifluoroacetyl, and acetyl and wherein n is from 1 to 8;

the method comprising: adding a cyclic α-N protected active amino ester according Formula II



Formula II

wherein PG is selected from CBz, Boc, trifluoroacetyl, and acetyl, wherein X is selected from C, S, and P, and wherein n is from 1 to 8; to a mixture of an amine catalyst in an organic solvent, the amine catalyst selected from the group comprising: aziridine and benzamidoxime.

Claim 2. The method of claim 1, wherein PG is trifluoroacetyl.

Claim 3. The method of claim 1, wherein PG is acetyl.

Claim 4. The method of claim 1, wherein PG is Boc.

Claim 5. The method of claim 1, wherein n is 3.

Claim 6. The method of claim 1, wherein X is C and the amine catalyst is aziridine.

Claim 7. The method of claim 1, wherein X is C and the amine catalyst is an amidoxime.