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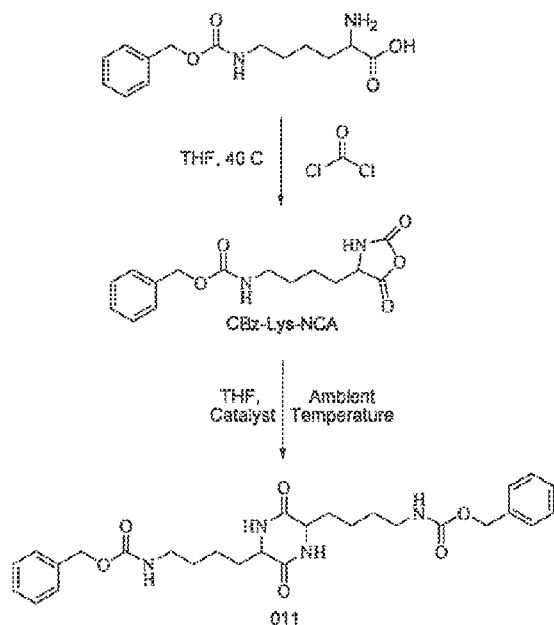
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61/798,016 15 March 2013 (15.03.2013) US(71) Applicant: **MANNKIND CORP.** [US/US]; One Casper Street, Danbury, Connecticut 06810 (US).(72) Inventors: **FREEMAN, John, J.**; 6 Topstone Rd., New Fairfield, CT 06812, New Fairfield, Connecticut 06812 (US). **PHANSTIEL, Otto**; 4350 Bending Branch Ln., Oviedo, FL 32766, Oviedo, Florida 32766 (US). **BAY, William, Elliot**; 297 Florida Hill Rd., Ridgefield, CT 06877, Ridgefield, Connecticut 06877 (US). **KRAFT,****Kelly, Sullivan**; 62 Plum Court Dr., Poughquag NY 12570, Poughquag, New York 12570 (US).(74) Agent: **JACKSON, Christopher**; Calfee Halter & Griswold, 1405 East Sixth St., Cleveland, Ohio 44114 (US).

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(54) Title: FORMATION OF N-PROTECTED BIS-3,6-(4-AMINO BUTYL)-2,5-DIKETOPIPERAZINE THROUGH A CYCLIC ALPHA-N-PROTECTED AMINO ESTER

(57) Abstract: A method for the synthesis of N-protected 3,6-aminoalkyl-2,5-diketopiperazines is provided. The method includes obtaining a cyclic α -N protected active amino ester and adding it to a mixture of an amine catalyst in an organic solvent.**Fig. 1**



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