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Synthesis of a New Family of Diamines: Components for Supramolecular Architectures

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Poster Presentation 2

SYNTHESIS OF A NEW FAMILY OF DIAMINES:
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The practical limits of manufacturing smaller and smaller electronic components is fast approaching, and scientists have been exploring the use of molecular and macromolecular electronic devices. Supramolecular systems have been designed and demonstrated to function as molecular switches, molecular wires or photoelectric devices. One supramolecular structure is the rotaxane which is composed of a linear molecular string (linker) threaded through a macrocyclic molecular ring with bulky blocking groups attached to the ends of the linker to prevent dethreading. The current goal is the synthesis of a family of diamine linkers of various lengths that can be attached to the bulky blocking group. Synthesis is being achieved through the reaction of *p*-hydroxyacetanilide with dibromoalkanes in basic media, followed by basic hydrolysis.¹ An example with dibromobutane is shown in Figure 1.

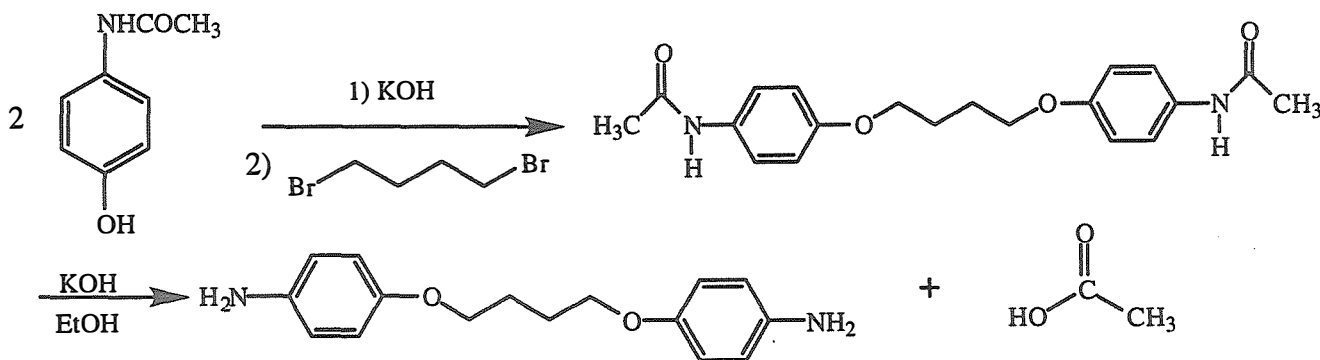


Figure 1

¹Bartulin, J.; Ramos, M.L.; Rivas, B.L. *Polymer Bulletin* 15, 405-409 (1986).