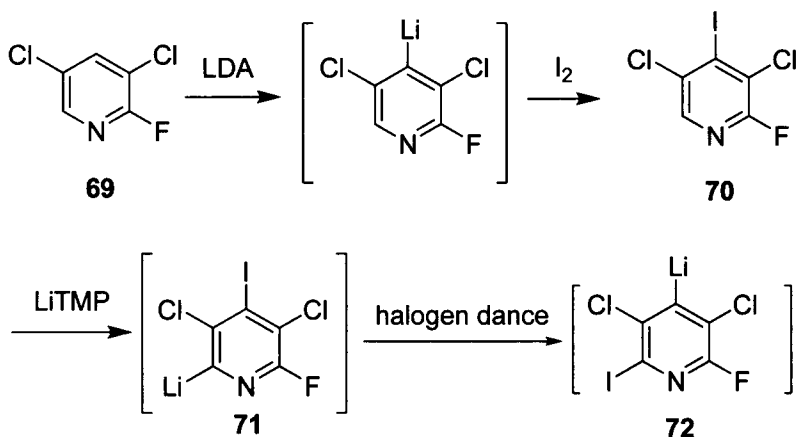


For 2,3,5-trihalo-substituted pyridine **69**, lithiation occurred at the more kinetically acidic 4-position, and then trapping with iodine afforded the 4-iodo derivative **70**. Subsequent lithiation produced 2-lithio-species **71** but underwent a “halogen dance” to the more stable intermediate 2-iodo-4-lithio derivative **72**.<sup>53</sup>



Compound **24** was designed as tri-peptide PLG mimetic as we discussed in Section 10.1.1. Lithiation of 2-fluoropyridine followed by trapping with iodine gave the iodide **73**. Halogen dancing using LDA and methallyl bromide gave the 3-substituted pyridine **74**. Iodine–magnesium exchange followed by trapping with the Boc-protected proline aldehyde afforded the alcohol **75** in an 85:15 diastereomeric mixture. Treatment of **75** with benzyl bromide in the presence of NaH and TBAI gave the benzyl ether **76**. Nucleophilic substitution of **76** with glycolamide produced **77**, which was deprotected to provide **24**.<sup>9</sup>

