INTERACTION OF 2-AMINODIPYRIDO[1,2-a:3',2'-d]IMIDAZOLE WITH DNA. II. SYNTHESIS OF NEW INTERCALATIVE ANALOGS.

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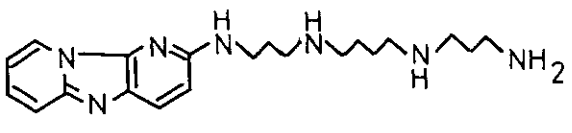
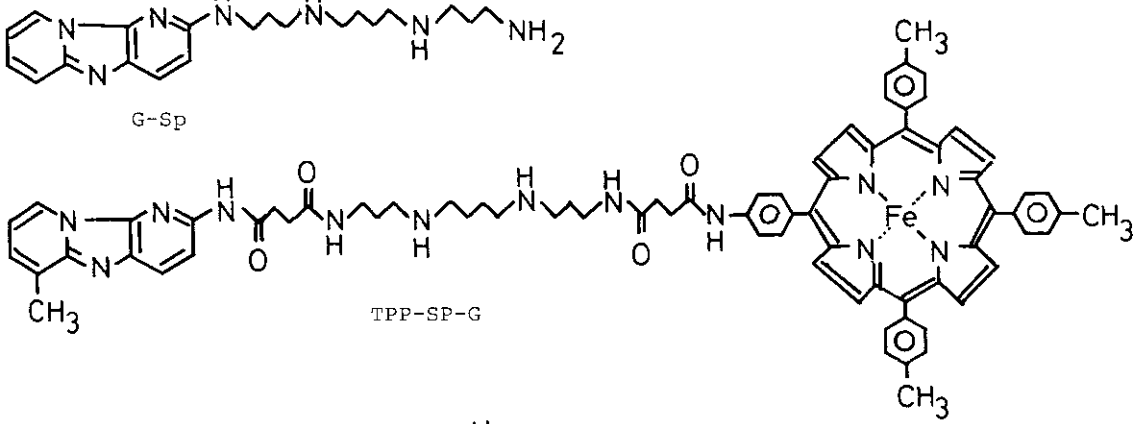
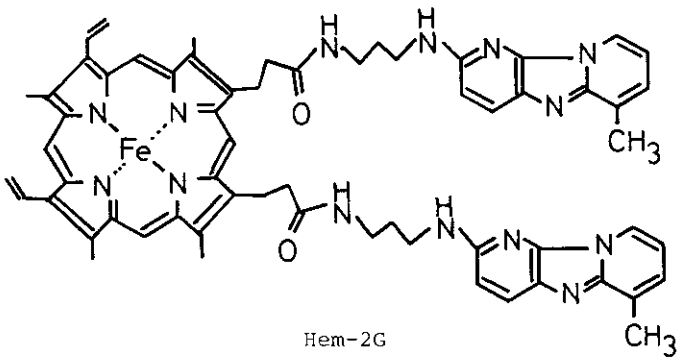
2-Aminodipyrido[1,2-a:3',2'-d]imidazole (Glu-P's) were established to intercalate into DNA by the methods of flow dichroism and unwinding experiment using supercoil closed circular plasmid DNA. Substitution of the 2-amino group of Glu-P's with spermine (G-Sp) or other polyamine derivatives caused far higher affinity of the compounds toward DNA. G-Sp also possesses strong DNA double strand stabilization from heat denaturation. We also found that G-Sp caused single strand scission of DNA in the presence of Fe(II). To obtain compounds which possess more strong DNA cleaving ability, we synthesized some compounds shown below. These compounds possessed rather high DNA cleaving ability.



G-Sp



TPP-SP-G



Hem-2G