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PNA-lipophilic Ligand Conjugates Synthesis

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Lipophilic ligands are a class of substances suitable for cell transport, they are lipids with a certain hydrophilic-lipophilic balance. When transported across the cell membrane, the hydrophilic end faces the extracellular water-soluble environment, and the hydrophobic end faces the cell membrane. A typical representative of this modification is the covalent attachment of bile acid and cholesterol to PNA. The conjugate also has a certain liver-targeting effect in vivo and has the potential to develop into a liver-targeted preparation.

The covalent binding of PNA with hydrophobic compounds or lipids has some excellent properties. For example, by connecting a hydrophobic long carbon chain to the N-terminus of PNA and amino acid residues to the C-terminus, the conjugate has good hydrophilicity and lipophilicity, and shows better specificity when hybridizing with DNA. The conjugate can also self-assemble into spherical micelles, and has application potential in biosensors, gene drugs, etc. PNA-lipophilic ligand conjugate also shows good performance in cell transport.

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