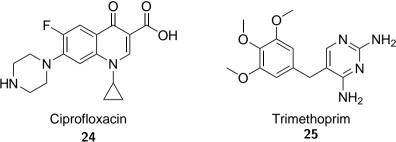


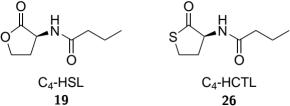


$$C_4$$
-HSL  $3$ -oxo- $C_{12}$ -HSL  $20$ 

HHQ PQS  $21$ 
 $A$ -OH  $A$ -C2  $A$ -C3  $A$ -OH  $A$ -C3  $A$ -C4-HSL  $A$ -C4-HSL













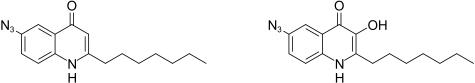


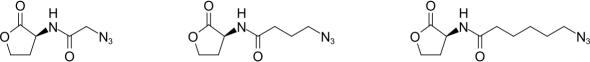


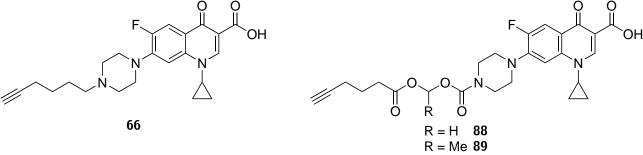






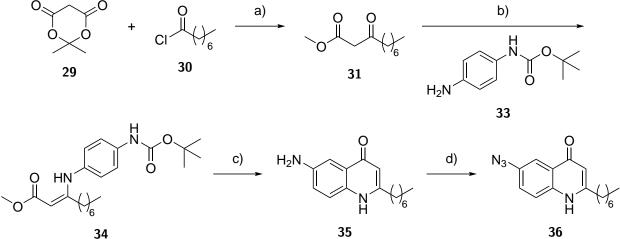


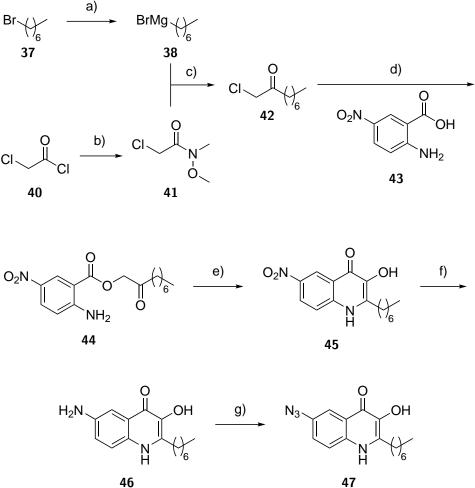


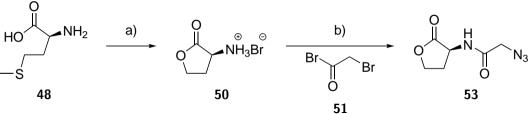


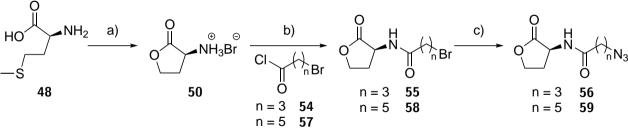


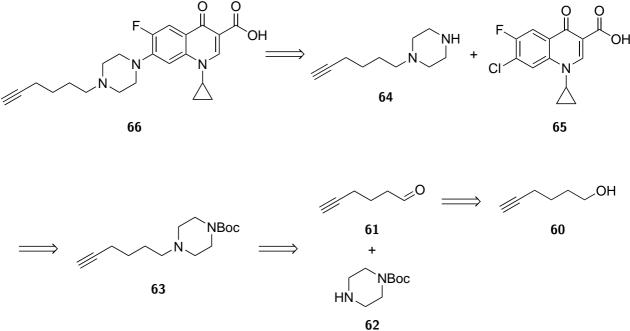
Autoinducer Antibiotic Autoinducer < , . Antibiotic

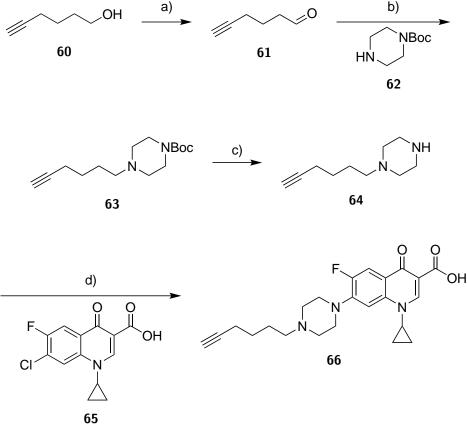


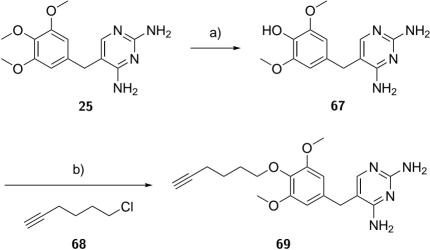


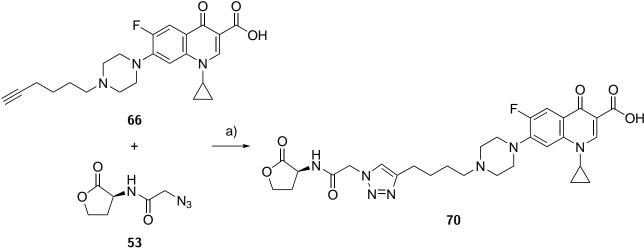


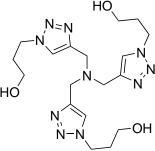


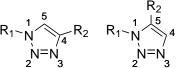


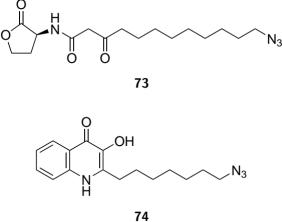












$$R_1 \sim N_3$$
 +  $R_2 \xrightarrow{a)} R_1 \sim N_1 \sim N_2$ 

