1. Predict the enone product, under thermodynamic control, with detailed reasonings.

\[
\text{O} \quad \text{C} \quad \text{H}^{+} \quad \text{O} \\
\text{O} \quad \text{H} \quad \text{C}_{14}H_{18}O
\]

2. Identify "X" and propose a detailed mechanism.

\[
\text{BF}_{3} \cdot \text{OEt}_2 \quad \text{DTBP} \\
\text{DCM, -78°C}
\]