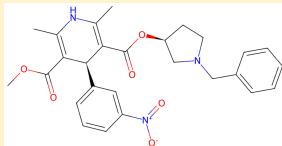
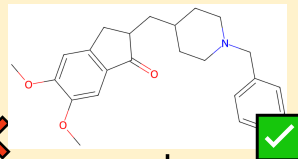
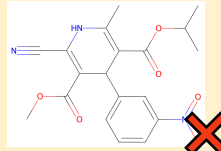
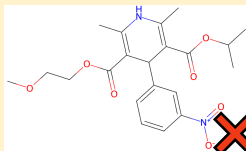


Question: Does this molecule have oral bioavailability?



Input Molecule



Few-shot Example

<think>

Step 1: Molecular Structure Analysis

The target molecule is a **dihydropyridine derivative** containing a **methyl ester at position 3**, **methyl groups at positions 2 and 6**, and a **chiral pyrrolidine ester substituent at position 5**. The molecule features a **meta-nitrophenyl group** at position 4 and includes a **benzylated pyrrolidine ring system**. The dihydropyridine core adopts a boat conformation due to sp^3 hybridization at position 4, while the pyrrolidine ring provides additional conformational constraint through its five-membered ring structure.

Step 2: Chemical Principle Application

Oral bioavailability depends on Lipinski's Rule of Five parameters: molecular weight <500 Da, LogP <5, hydrogen bond donors <5, and acceptors <10. The calculated molecular weight is approximately 455 Da, approaching the upper limit. The nitro group significantly increases polarity while reducing membrane permeability, and the pyrrolidine nitrogen provides basicity for potential salt formation but may limit passive diffusion.

Step 3: Few-shot Comparative Analysis

Both "False" examples contain **nitrophenyl dihydropyridines with similar ester functionalities** but simpler alkyl ester chains instead of the complex pyrrolidine system. The "True" example represents a structurally distinct tetrahydroisoquinoline with a basic amine and fewer polar substituents. Our target molecule **combines the problematic nitrophenyl group from the "False" examples with additional structural complexity through the pyrrolidine substituent**, suggesting even greater potential for bioavailability limitations compared to the simpler "False" examples.

Conclusion:

Nitrophenyl polarity reducing membrane permeability + ester susceptibility to first-pass metabolism + structural similarity to negative examples + increased molecular complexity beyond simple dihydropyridines indicates poor oral bioavailability. </think>

<answer>False</answer>

