The invention relates to a process for the synthesis of ivabradine of formula (I), addition salts thereof with a pharmaceutically acceptable acid, and hydrates thereof:

$$CH_3O$$
 CH_3O
 OCH_3
 OCH_3
 OCH_3
 OCH_3

The process, according to the invention, consists in that the compound of formula (V):

$$H_3CO$$
 N
 O
 (V)

is subjected to a reductive amination reaction with the amine of formula (VI):

in the presence of triethylamine and formic acid, in the absence of solvent or in an alcoholic solvent.

Claims: 5