R^4 and R^5, together with the nitrogen atom to which they are attached, form a saturated 4- to 6-membered heterocyclic ring which may contain one further heteroatom selected from nitrogen or oxygen;

R^3 is C_{1-4}-alkyl and

X is nitrogen or CH.

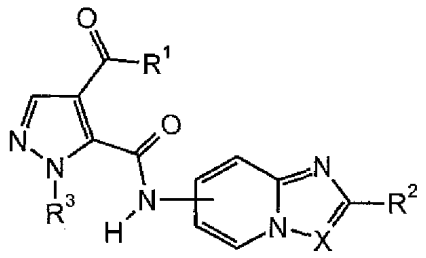
The imidazo[1,2-a]pyridine compounds of the formula I are either precursors for active principles or active principles itself, acting as phosphodiesterase (PDE) inhibitors, particularly PDE10 inhibitors. PDE10 inhibitors have the potential to treat psychotic disorders like schizophrenia (Int. Patent Publication WO 2012/076430).

According to the Int. Patent Publication WO 2012/076430 (see particularly scheme 1, page 26) commonly known amide formation methods can be applied for the formation of the desired compounds. For instance a pyrazine carboxylic acid derivative can be activated with a coupling agent prior to the reaction with the imidazo[1,2-a]pyridine moiety or in another embodiment the acid chloride of the pyrazine carboxylic acid is reacted with the imidazo[1,2-a]pyridine moiety.

Object of the embodiments disclosed herein therefore was to find a more effective synthetic approach which is scalable and which allows to obtain the desired imidazo[1,2-a]pyridine compounds of the formula I with high selectivity and high yield.

This object could be achieved with the process of the present disclosure as described below.

In one aspect, there is provided a process for the preparation of the imidazo[1,2-a]pyridine compounds of the formula



I

wherein

R^1 is C_{1-4}-alkoxy or NR^4R^5 wherein

R^4 and R^5 are independently hydrogen or C_{1-4}-alkyl or