

MULTICOMPONENT SYNTHESIS OF PYRROLINE DERIVATIVES - POTENTIAL CORROSION INHIBITORS

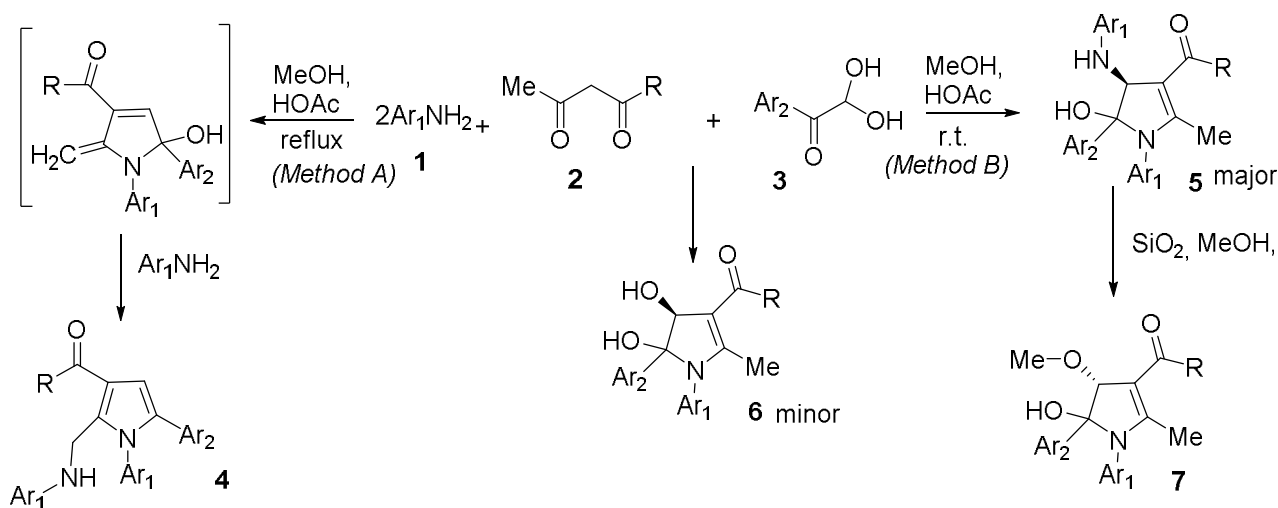
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Multicomponent condensations of hydrates of arylglyoxals, acetylacetone (acetoacetic ether) and aromatic amines in the ratio 1: 1: 2 were studied. It has been shown that in the case of *o*-halogenated anilines, the formation of pyrrole type **4** is observed when the starting components in MeOH are heated in the presence of HOAc (*method A*), whereas the *m*- and *p*-substituted anilines with stirring of reagents at room temperature (*method B*) form a mixture of 4,5-dihydropyrroles **5** and **6** (~10%). The increase in the reaction time in this case leads to the transformation of 4,5-dihydropyrrolols **6** to products **7** - the result of the nucleophilic substitution of the arylamine group by the methoxy moiety.



Stage-by-stage schemes for the synthesis of pyrroles **4-6** are analyzed. It has been found that the formation of dihydropyrroles **5** involves the formation of an intermediate enamine, whereas trisubstituted pyrroles **4** are synthesized via the α -hydroxy ketone step, a product of the interaction of arylglyoxal hydrates with β -dicarbonyl compounds. It has been shown that *o*-substituted anilines do not form products **5** or **6** during the reaction of *method B*.

The structure of products **4,5,7** is additionally confirmed by X-ray crystallographic analysis. Preliminary data have been obtained on the potential use of type **5** compounds as corrosion inhibitors.