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Interaction of *D*-lactose with aromatic amines in aqueous-ethanolic medium

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Abstract

Results on studying of interaction of *D*-lactose with the substituted arylamines, in particular with *p*-amino benzoic acid and *p*-toluidine are presented. Corresponding *N*-aryllactosylamines are shown as products on the first stage of reaction; the mixed aqueous-alcoholic solutions with the content of ethanol of 60-65% are defined as an optimum solvent for synthesis. An acid-catalytic destruction of *N*-lactosylamines was studied by the spectrophotometry and IR-spectroscopy; it is shown, that formation of melanoidins from *p*-tolyl-lactosylamine proceeds through formation and degradation of Amadori rearrangement product, significantly less basic *N*-*p*-carboxyphenyllactosylamine is much stable to isomerization and formation of melanoidins in the studied conditions. Based on the spectroscopy data obtained the structure of "brown"-products formed in *D*-lactose – *p*-toluidine system was determined as polymer, containing α,α'-disubstituted furan and *N*-tolyl-pyrrole fragments.

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