ID: 6991

Congress: 1st Tabriz International Life Science Conference and 12th Iran Biophysical Chemistry Conference

Title: Enzymatic kinetic in imidazolium based ionic liquid

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<p style="margin-bottom: 0.0001pt; text-align: justify; line-height: 150%;" class="MsoNormal">Introduction: ionic liquids (ILs) provide a new generation of solvents entirely composed of ions and are usually considered as green solvents. <span>&nbsp;</span>Biotechnological applications of ILs are currently increasing. This study aims to investigate the mechanism by which an ionic liquid may enhance the rate of biocatalysis.</p>  
<p style="margin-bottom: 0.0001pt; text-align: justify; line-height: 150%;" class="MsoNormal">Method: Enzymatic activity of horse liver alcohol dehydrogenase was measured by following the reduction of NAD<sup>+</sup> in different concentration of 1-butyl-3-methylimidazolium-bis(trifluoromethylsulfonyl) imide; [BMIM][NTf<sub>2</sub)]. The kinetic parameters of the enzyme (k<sub>m</sub>, V<sub>max</sub> and k<sub>cat</sub>) were obtained by UV-visible spectroscopy using michaelis menten equasion. Structural assessment were performed to find the structure-function relationship.</p>  
<p style="margin-bottom: 0.0001pt; text-align: justify; line-height: 150%;" class="MsoNormal">Result: The obtained results showed that [BMIM][NTf<sub>2</sub>] led to reduction of K<sub>m</sub> and increasing the enzyme performance. </p>  
<p style="margin-bottom: 0.0001pt; text-align: justify; line-height: 150%;" class="MsoNormal">Conclusion: Alcohol dehydrogenase from Horse liver remain active in [BMIM][NTf<sub>2</sub>]. Moreover,
structural analysis showed that the used IL brings about alteration in the secondary structure of the enzyme. The obtained results would introduce \([\text{BMIM}][\text{NTf}_2]\) as a good alternative for normal organic solvents.
ionic liquid, enzymatic kinetic, alcohol dehydrogenase

Presentation: Poster