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Solubilization of NADPH-Cytochrome P450 Oxidoreductase

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NADPH-cytochrome p450 oxidoreductase (CYPOR) is a membrane-bound protein found in the cytoplasmic side of the endoplasmid reticulum. In particular, CYPOR is an integral membrane protein that spans the membrane via a transmembrane helix. To better understand the dynamics of this protein, it is important to study it in details using the nuclear magnetic resonance spectroscopy (NMR). This technique, however, requires large quantities of this protein which can be difficult to obtain considering its membrane-bound nature. The goal of this project is to optimize solubilization of CYPOR using a variety of detergents and additives. For this, TritonX-100, X-114, X-405, TWEEN20, and Brij35 detergents were evaluated. Also, the combinations of TritonX-100 with CHAPS or poly and alkylamine additives were assessed. No improvements were observed in this extraction study; so, it is concluded that we need to optimized expression of CYPOR rather than its solubilization.

Biography

Sara Arafeh is working as an Assistant Professor in the Department of Chemistry in Marquette University, USA. Her researcher interest includes Nuclear Medicine, Molecular Medicine and Nuclear magnetic resonance spectroscopy (NMR).

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