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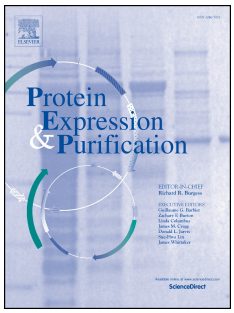

Escherichia coli expression, purification, and refolding of human folate receptor α (hFRα) and β (hFRβ)

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Escherichia coli expression, purification, and refolding of human folate receptor α (hFRα) and β (hFRβ)

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Abstract:

Human folate receptors (hFRα and hFRβ) are membrane proteins anchored to the cell surface by glycosylphosphatidylinositol. They play an important role in cell growth by taking up folate for *de novo* synthesis of purines and methylation of DNA, lipids, and proteins. Thus, controlling folate uptake through hFRs may lead to the development of anti-cancer drugs. Development of hFRs-targeting drug requires a large amount of hFRs. However, it is difficult to prepare active forms of hFRs from prokaryotic cells because of their high content of cysteine residues that form disulfide bonds. Here, we prepared active forms of hFRα and hFRβ from inclusion bodies of *Escherichia coli*. The crucial steps in our preparation were intensive washing of the inclusion bodies to remove impurities derived from *E. coli* and gradual dropping of solubilized hFRs into refolding buffers to correctly reform disulfide bonds. The binding activity of prepared