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# Cloning and expression of reteplase in *E. coli* using different prokaryotic promoters

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**Background and Aims:** Retaplase is a proteolytic enzyme that activates plasminogen to lyse blood clots and restore coronary artery blood flow in patients having myocardial infarction. The present study was undertaken to select an efficient and cost effective method of production of this enzyme in E.coli.
**Methods:** The cDNA sequence of reteplase was inserted into different vectors containing lac, T7, tac, and arabinose promoters. Subsequently these constructs were expressed using inducers and the activities of the obtained proteins were measured.
**Results:** Constructs having lac and tac promoters expressed reteplase as inclusion bodies while in the ones with T7 and arabinose, some of the expressed proteins were located in the periplasmic space. The amount of reteplase produced as well as its refolding and activity was evaluated and the arabinose promoter provided the best results.
**Conclusions:** In the present study, we were able to evaluate different promoters for the expression of reteplase in E.coli and select the arabinose system for further studies regarding purification and large scale production of this enzyme.