



Molecular Biotechnology Programme
Uppsala University School of Engineering

UPTEC X 01 035	Date of issue 2001-07	
Author	Claes Ladenvall	
Title (English)	Development of algorithms for automated construction of padlock probes	
Title (Swedish)		
Abstract	<p>Padlock probes are oligonucleotide probes that can be used to detect single nucleotide variations of DNA and RNA <i>in situ</i> or in solution. They can be circularised by ligation in the presence of a perfectly matching target sequence. Design of padlock probes has so far been done manually. To automate the designing process algorithms to search for intramolecular complementarities and to determine the melting temperature, T_m, using nearest-neighbour thermodynamics, were implemented. The algorithms have been assembled in a program called makepad. Makepad can be used to generate candidate designs of padlock probes.</p>	
Keywords	Padlock probe, T_m , Smith-Waterman, intramolecular complementarity	
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Project name	Sponsors	
Language	Security	
English		
ISSN 1401-2138	Classification	
Supplementary bibliographical information	Pages	
	23	
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