Accepted Manuscript

Arginine homopeptides for plasmid DNA purification using monolithic supports

Sara Cardoso, Ângela Sousa, João A. Queiroz, Adriano R. Azzoni, Fani Sousa

PII: S1570-0232(18)30118-1
DOI: doi:10.1016/j.jchromb.2018.04.031
Reference: CHROMB 21146

To appear in:

Received date: 18 January 2018
Revised date: 11 April 2018
Accepted date: 15 April 2018

Please cite this article as: Sara Cardoso, Ângela Sousa, João A. Queiroz, Adriano R. Azzoni, Fani Sousa , Arginine homopeptides for plasmid DNA purification using monolithic supports. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Chromb(2017), doi:10.1016/j.jchromb.2018.04.031

Arginine homopeptides for plasmid DNA purification using monolithic supports

Sara Cardoso[1,2], Ângela Sousa[1], João A. Queiroz[1], Adriano R. Azzoni[2], Fani Sousa*[1]

[1] *CICS-UBI - Health Sciences Research Centre, Universidade da Beira Interior, Av. Infante D. Henrique, 6201-506, Covilhã, Portugal*

[2] *Departamento de Engenharia Química, Escola Politécnica, Universidade de São Paulo. Av. Prof. Lineu Prestes, 580 – Bloco 20 05424-970, São Paulo, Brazil.*

*correspondence:

Fani Sousa

CICS-UBI – Health Sciences Research Centre

Universidade da Beira Interior

Av. Infante D. Henrique

6200-506 Covilhã

Portugal

Tel.: +351 275 329 074; Fax: +351 275 329 099

E-mail: fani.sousa@fcsaude.ubi.pt

Abstract

Purification of plasmid DNA targeting therapeutic applications still presents many challenges, namely on supports and specific ligand development. Monolithic supports have emerged as interesting approaches for purifying pDNA due to its excellent mass transfer properties and higher binding capacity values. Moreover, arginine ligands were already described to establish specific and preferential interactions with pDNA. Additionally, some studies revealed the ability of arginine based cationic peptides to condense plasmid DNA, which increased lengthening can result in strongest interactions with higher binding capacities for chromatographic purposes of large molecules such as pDNA. In this work, arginine homopeptides were immobilized in monolithic supports and their performance was evaluated