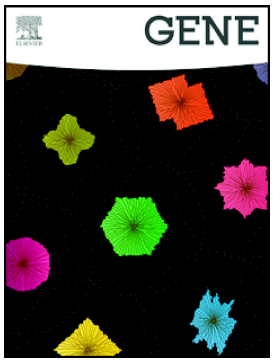

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Competitive regulation of *IPO4* transcription by ELK1 and GABP

Pengpeng Xu[1#]; Wenbo Lin[1#]; Fenglin Liu[1]; Alan Tartakoff[2], Tao Tao[1*]

[1] State Key Laboratory of Stress Cell Biology, School of Life Sciences, Xiamen University, Xiamen, Fujian, China; [2]Department of Pathology, Case Western Reserve University School of Medicine, Cleveland, Ohio, USA

[#]Both authors contributed equally to this work.

***Corresponding author.** Tel: +86-592-2182880; E-mail: taotao@xmu.edu.cn

Abstract

Nuclear import is a highly selective process that involves the specific recognition of appropriate import signals by suitable receptors. Many nuclear transport pathways are mediated by importin β superfamily members. Among them, IPO4 is a nuclear import receptor for many cargoes. However, its transcriptional regulation remains largely unknown. In the present study, we identified a core region encompassing nt -118 to +108 that is necessary for its promoter activity. Transcription factors binding to this region were screened, resulting in the identification of two members of the Ets family, Ets-like transcription factor-1 and GA binding protein, which repress or activate its promoter activity, respectively. Within this promoter region, two Ets binding sites were identified and shown to be required for promoter activity. Ets-like transcription factor-1 and GA binding protein compete with each other to regulate its promoter activity *via* its downstream Ets binding sites, as evidenced by EMSA and a luciferase reporter assay. Overexpression of Ets-like transcription factor-1 or GA binding protein result in its down-regulation or up-regulation in cells. Therefore, both Ets-like transcription factor-1 and GA binding protein regulate *IPO4* transcription.

Keywords: IPO4; transcription regulation; ELK1; GABP