

# Non-Viral Episomal Vector Mediates Efficient Gene Transfer of the $\beta$ -Globin Gene into K562 and Human Haematopoietic Progenitor Cells

Vassileios M. Lazaris <sup>1,†</sup>, Emmanouil Simantirakis <sup>2,†</sup>, Eleana F. Stavrou <sup>1</sup>, Meletios Verras <sup>1</sup>, Argyro Sgourou <sup>3</sup>, Maria K. Keramida <sup>4</sup>, George Vassilopoulos <sup>2</sup> and Aglaia Athanassiadou <sup>1,\*</sup>

<sup>1</sup> Department of General Biology, Medical School, University of Patras, 26504 Patras, Greece; vlazaris@gmail.com (V.M.L.); stauroue@upatras.gr (E.F.S.); meletver@gmail.com (M.V.)

<sup>2</sup> Centre of Basic Research, Biomedical Research Foundation of the Academy of Athens (BRFAA), 11527 Athens, Greece; esimantirakis@gmail.com (E.S.); gvasilop@bioacademy.gr (G.V.)

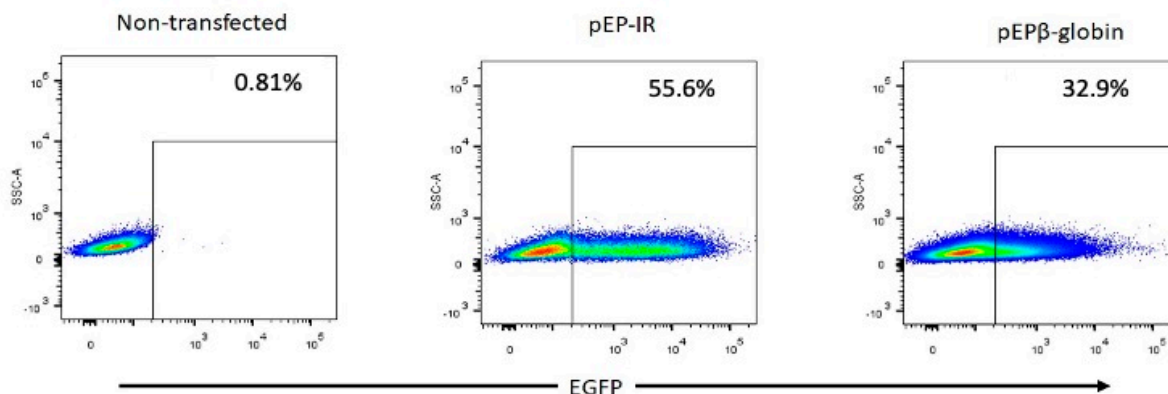
<sup>3</sup> Biology Laboratory, School of Science and Technology, Hellenic Open University, 26335 Patras, Greece; sgourou@eap.gr

<sup>4</sup> IVF and Andrology Labs, IVF Unit, General University Hospital of Patras, 26504 Patras, Greece; maria\_keram@yahoo.gr

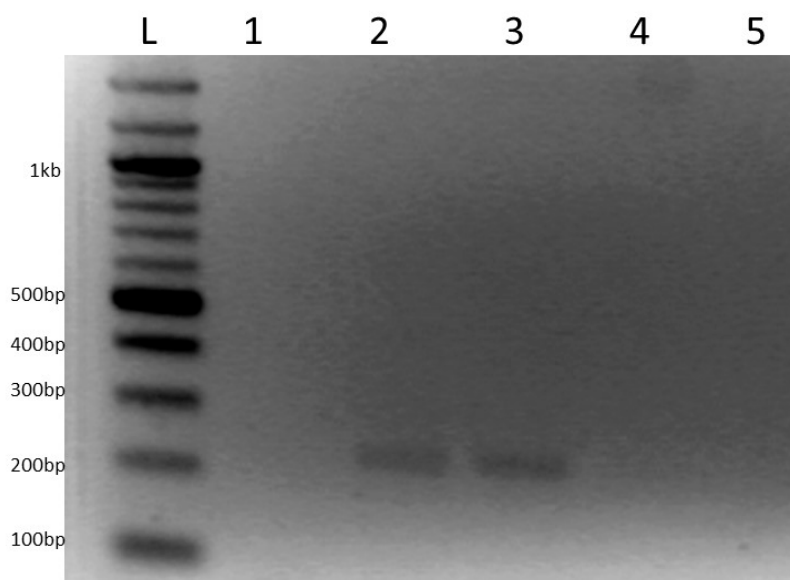
\* Correspondence: athanass@med.upatras.gr

† These authors contributed equally to this work.

**Supplementary Materials:** The following is supporting information.



**Figure S1.** Flow cytometry of transfection efficiencies. CD34<sup>+</sup> cells, non-transfected, transfected with plasmid pEP-IR and transfected with plasmid pEPβ-globin.



**Figure S2.** PCR test for plasmid detection in DNA from CFC colony cells. L. 100bp DNA ladder NEB New England; 1. CFC colony cells transfected with pEP-IR, non-fluorescent; 2. CFC colony cells transfected with pEP-IR, Fluorescent; 3. CFC colony cells transfected with pEPβ-globin, Fluorescent; 4 CFC colony cells transfected with pEPβ-globin, non-Fluorescent; 5. Empty slot.

**Table S1.** Nucleofections to determine transfection efficiencies for transfections into CD34+ cells. Nucleo 1 to 5 are the nucleofections carried out, along with the respective data –columns for non-transfected CD34+ cells, CD34+ cells transfected with plasmid pEP-IR and CD34+ cells transfected with pEP $\beta$ -globin. The three last rows provide data from statistical analysis.

Nucleofection	Non- transfected	pEP-IR	pEP-bglobin
nucleo1	0.89	18.3	
nucleo2	1.95	10.2	8.44
nucleo3	0.81	32.6	11.8
nucleo4	1.3	11.5	9.15
nucleo5	0.89	55.6	32.9
average	1.168	25.64	15.5725
Stand-dev	0.47740968	18.9621465	11.6418079
SEM	0.2135041	8.48012972	5.82090396