

**Manuscript no. HAEMATOL /2011/055566 entitled “Human induced pluripotent stem cells can reach complete terminal maturation: in vivo and in vitro evidence in the erythropoietic differentiation model”**

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**Information about the contributions of each person named as having participated in the study**

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2) Authors who participated in the conception of the study: Ladan Kobari

3) **Design & Methods**. The following authors were responsible for specific investigations (please detail):

- Ladan Kobari was responsible of all aspects of the work
- Frank Yates was responsible for hiPSC<sup>SCD</sup> generation and sequencing
- Noufissa Oudrhiri was responsible for Generation and characterization of hiPSC<sup>SCD</sup>
- Alain Francina was responsible for HPLC and mass spectrometry hemoglobin analyses
- Laurent Kiger was responsible for hemoglobin functionality
- Christelle Mazurier was responsible for Flow cytometry analyses
- Shaghayegh Rouzbeh was responsible for hiPSC and embryoid body’s differentiation
- Wassim EL-Nemer was responsible for Adhesion assay
- Nicolas Hebert was responsible for performing all in vitro and in vivo cell culture experiment
- Marie-Catherine Giarratana participated in the erythroid cell culture design
- Sabine François was responsible for monitoring NOD/SCID mice
- Alain Chapel was responsible for NOD/SCID experiments
- Hélène Lapillonne was responsible for cell analyses
- Dominique Luton was responsible for providing amniotic fluid cells

4) **Results.** The following authors were responsible for specific portions of the results, including figures and tables (please indicate the person responsible for each figure and each table):

- Ladan Kobari was responsible of all results, figures and tables of the work.
- Frank Yates was responsible for hiPSC<sup>SCD</sup> generation and sequencing results and Figure S1, S2, S3 and Table S1
- Noufissa Oudrhiri was responsible for Generation and characterization of hiPSC<sup>SCD</sup> results and Figure S1, Figure S2
- Alain Francina was responsible for HPLC and mass spectrometry hemoglobin results
- Laurent Kiger: was responsible for hemoglobin functionality results
- Christelle Mazurier: was responsible for Flow cytometry results and figure 2B, S5, S6B
- Wassim EL-Nemer was responsible for Adhesion assay results
- Nicolas Hebert participated in all in vitro and in vivo cell culture results and figure 1, 2A, 4A, 4B, 5A, 5B.

5) **Writing the manuscript.** The following authors were responsible for writing the manuscript:

- Ladan Kobari, Annelise Bennaceur-Griscelli and Luc Douay were responsible for writing the manuscript
- Frank Yates was responsible for hiPSC<sup>SCD</sup> generation and sequencing
- Alain Francina was responsible for HPLC and mass spectrometry hemoglobin
- Laurent Kiger: was responsible for hemoglobin functionality

#### 6) **Contributors Listed in Acknowledgments**

The authors would like to thank Françoise Ceccaldi (hospital of Beaujon) for providing amniotic fluid cells, Oliver Féraud and Emilie Gobbo (U935 ESTeam, U935 Villejuif) for iPSC<sup>SCD</sup> banking, Frank Griscelli (U935, Villejuif) for teratoma assays and Nathalie Mario for analysis of enzyme activities.

This work was supported by the “Etablissement Français du Sang (EFS)”, University Paris Sud 11, Pôle de compétitivité MEDICEN Region Ile de France Ingecell program, INSERM, Univer PRES Sud, Fondation pour la Recherche Médicale (FRM), Association ARBC, ISI/OSEO StemRed program and Association “Combattre La Leucémie ”,