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author contribution form

Title	Adult B-cell acute lymphoblastic leukemia cells display decreased PTEN activity and constitutive hyperactivation of PI3K/Akt pathway despite high PTEN protein levels
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Specific contributions of each author are listed on page 2 of this document.

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Please describe the contributions of each author, indicating who was responsible for each part of the study and the preparation of the manuscript

(collection of data, experiments, data analysis, generation of figures, collection of images, interpretation of data, preparation of the text, etc.)

A. Margarida Gomes performed most of the experiments, analyzed data, and drafted the manuscript;

Maria V. D. Soares performed experiments and analyzed data;

Vanda Póvoa performed experiments and analyzed data;

Leila R. Martins performed experiments and analyzed data;

Alice Melão performed experiments and analyzed data;

Ana Serra-Caetano performed experiments and analyzed data;

Patrícia Ribeiro recruited patients;

Aida B. de Sousa recruited patients;

João F. Lacerda recruited patients;

Joana Caldas performed patient immunophenotypical characterization and classification;

João F. Lacerda recruited patients and contributed to the coordination of the study;

João T. Barata coordinated the study, designed the research and wrote the manuscript.

All authors were involved in the discussion of the study; and revised, critically read and approved the manuscript.