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Francesca Bonifazi, Gianluca Storci, Giuseppe Bandini and Massimiliano Bonafè designed the study; Francesca Bonifazi, Giuseppe Bandini, Michele Cavo and Martina Ferioli recruited patients; Gianluca Storci performed the in vitro studies; Elena Zani and Fiorenzo Albani assessed busulfan dosage and kinetics; Sara Bertoni and Sabrina De Carolis performed cell cultures, Real Time PCR, gene knockdown; Elena Marasco, Paolo Garagnani and Vilma Mantovani made genotype design and analysis; Andrea Bontadini, Simonetta Rizzi, Elisa Dan, Maria Rosa Motta and Maria Rosaria Sapienza were in charge of cell banking, DNA banking and extraction; Francesca Bonifazi and Massimiliano Bonafè carried out statistical analysis; Francesca Bonifazi, Gianluca Storci, Giuseppe Bandini and Massimiliano Bonafè wrote the manuscript; Michele Cavo reviewed the manuscript.