MondoA is highly overexpressed in acute lymphoblastic leukemia cells and modulates their metabolism, differentiation and survival.

Acute lymphoblastic leukemia (ALL) is the most common childhood cancer. To identify novel candidates for targeted therapy, we performed a comprehensive transcriptome analysis identifying MondoA (MLXIP) - a transcription factor regulating glycolysis - to be overexpressed in ALL compared to normal tissues. Using microarray-profiling, gene-set enrichment analysis, RNA interference and functional assays we show that MondoA overexpression increases glucose catabolism and maintains a more immature phenotype, which is associated with enhanced survival and clonogenicity of leukemia cells. These data point to an important contribution of MondoA to leukemia aggressiveness and make MondoA a potential candidate for targeted treatment of ALL.