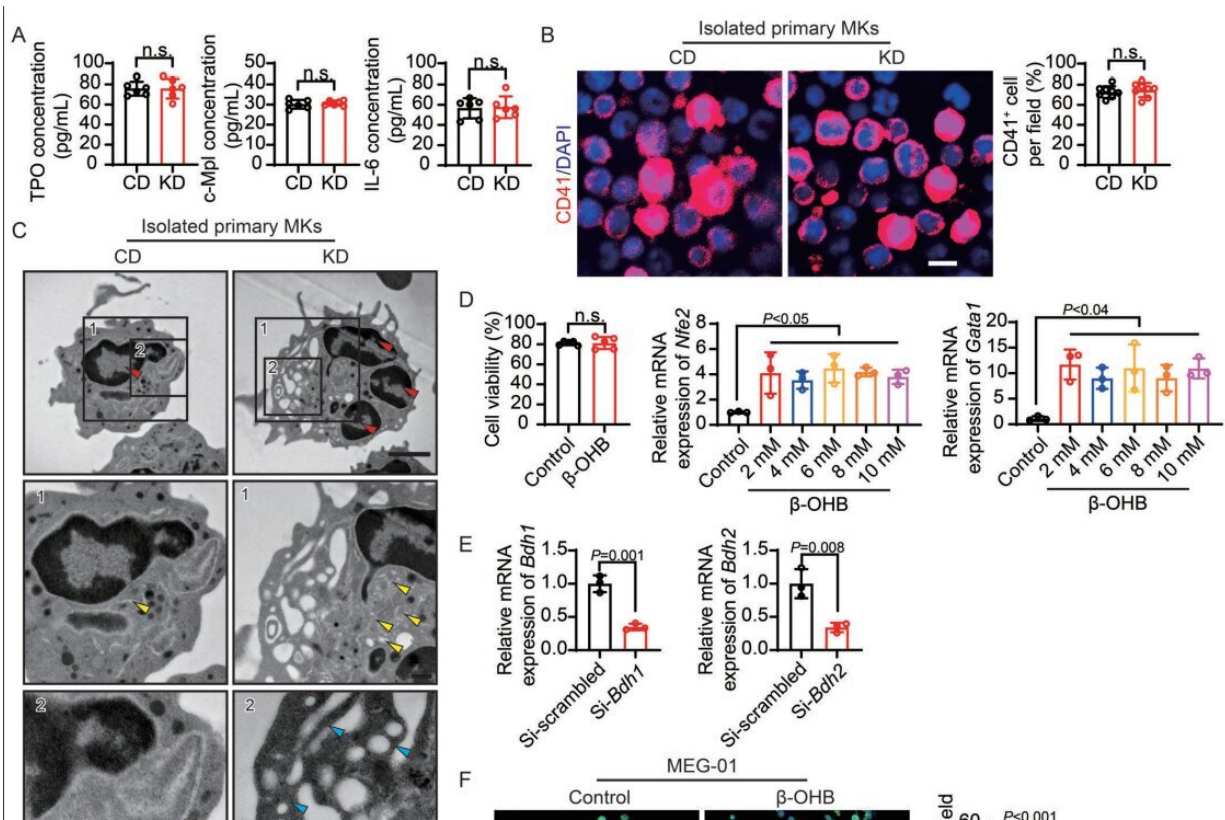


# High fat ketogenic diet envisioned as potential life-saving therapy to combat low platelets in cancer patients

December 29 2022, by Delthia Ricks



Ketogenic diet promotes megakaryopoiesis and platelet production via  $\beta$ -OHB (A) ELISA detection of serum TPO, c-Mpl, and IL-6 concentrations in control or KD-treated mice at day 7 (n = 6 samples per group). (B) Representative immunofluorescence micrograph of isolated primary MKs stained with CD41 (red) and DAPI (blue). Scale bar: 20  $\mu$ m. Quantification of CD41+ cells in isolated cells (n = 8 random fields per group). (C) Representative transmission

electron microscopy micrographs of isolated primary MKs from control or KD-treated mice. Red arrowhead: nucleus. Yellow arrowhead: pre-DMS. Blue arrowhead: cytoplasmic rearrangements. Scale bar in upper panel: 2  $\mu\text{m}$ . Scale bar in middle panel: 500 nm. Scale bar in lower panel: 1  $\mu\text{m}$ . (D) Quantification of cell viability in vehicle- or  $\beta$ -OHB-treated MKs (n = 5 samples per group). QPCR detection of Nfe2 and Gata1 RNA expressions in MK treated with various doses of  $\beta$ -OHB (n = 3 samples per group). (E) QPCR quantification of Bdh1 and Bdh2 mRNA expression in MK transfected with scramble siRNA or Bdh1/2 siRNA (n = 3 samples per group). (F) Phalloidin (green) and DAPI (blue) immunofluorescent staining micrographs of human MEG-01 cells treated with vehicle or 2 mM  $\beta$ -OHB. Scale bar: 150  $\mu\text{m}$ . Quantifications of MK number per field (n = 8 random fields per group). (G) Representative transmission electron microscopy micrographs of human MEG-01 cells treated with vehicle or 2 mM  $\beta$ -OHB. Red arrowhead: nucleus. Yellow arrowhead: pre-DMS. Blue arrowhead: cytoplasmic rearrangements. Scale bar in upper panel: 2  $\mu\text{m}$ . Scale bar in middle panel: 500 nm. Scale bar in lower panel: 1  $\mu\text{m}$ . (H) Megakaryopoiesis- and thrombocytopoiesis-associated gene expression of human MEG-01 cells from vehicle- or  $\beta$ -OHB-stimulated MKs pre-treated with or without MCT1 inhibitor AZD3965 (n = 3 samples per group). (I) Megakaryopoiesis- and thrombocytopoiesis-associated gene expression of vehicle- or  $\beta$ -OHB-stimulated human MEG-01 cells pre-treated with or without BDH1/2 siRNA (n = 3 samples per group). \*p

Citation: High fat ketogenic diet envisioned as potential life-saving therapy to combat low platelets in cancer patients (2022, December 29) retrieved 3 May 2024 from <https://medicalxpress.com/news/2022-12-high-fat-ketogenic-diet-envisioned.html>

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