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Título	Yerba Mate Stimulates Mitochondrial Biogenesis and Thermogenesis in High-Fat-Diet-Induced Obese Mice
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Resumo	<p>Scope: The potential effects of yerba mate (YM) on mitochondrial biogenesis and thermogenesis are evaluated.</p> <p>Methods and results: The in vitro effects of YM on mitochondrial respiration are assessed in C2C12 cells. The expression of genes related to mitochondrial biogenesis and thermogenesis are analyzed by quantitative PCR. The in vivo experiments are performed on mice fed a high-fat diet (HFD) and treated with YM extract. Indirect calorimetry was performed, and the expression of genes and proteins related to mitochondrial biogenesis, thermogenesis, and de novo lipogenesis is determined by quantitative PCR and western blot. Our in vitro data indicate that YM increases mtDNA copy number as well as mitochondrial spare respiratory capacity and coupling efficiency. The gene expression profile reinforces this evidence, indicating a modulation of genes downstream of Ampk. In vivo, it is found that YM partially prevents diet-induced obesity by increasing energy expenditure and enhancing mitochondrial biogenesis via the AMPK/SIRT1/PGC1α pathway.</p> <p>Conclusions: YM stimulates mitochondriogenesis and Ucp expression, leading to an increase in the spare respiratory capacity and energy dissipation. These effects may help to better understand the potential use of YM for obesity treatment.</p>
Fomento	