Tipo	Periódico
Título	Dynamic changes in dicer levels in adipose tissue control metabolic adaptations to exercise
Autores	Bruna B. Brandão, Soren Madsen, Atefeh Rabiee, Matteo Oliverio, Gabriel P. Ruiz, Danilo L. Ferrucci, Jéssica L. Branquinho, Daniela Razolli, Silas Pinto, Thomas S. Nielsen, William T. Festuccia, Adriano S. Martins, Beatriz A. Guerra, Thiago L. Knittel, Ditte Sogaard, Steen Larsen, Jorn W. Helge, Josef Brandauer, Lício A. Velloso, Brice Emanuelli, Jan-Wilhelm Kornfeld, C. Ronald Kahn, Sara G. Vienberg, Juleen R. Zierath, Jonas T. Treebak, Marcelo A. Mori
Autor (es) USF	Daniela Razolli
Autores Internacionais	Soren Madsen, Atefeh Rabiee, Matteo Oliverio, Thomas S. Nielsen, Ditte Sogaard, Steen Larsen, Jorn W. Helge, Josef Brandauer, Brice Emanuelli, Jan-Wilhelm Kornfeld, C. Ronald Kahn, Sara G. Vienberg, Juleen R. Zierath, Jonas T. Treebak
Programa/Curso (s)	Programa de Pós-Graduação Stricto Sensu em Ciências da Saúde
DOI	10.1073/pnas.2011243117
Assunto (palavras chaves)	microRNA; adipose tissue; exercise; metabolic flexibility; cross-talk
Idioma	Inglês
Fonte	Título do periódico: Proceedings Of The National Academy Of Sciences Of The United States Of America ISSN: 0027-8424 Volume/Número/Paginação/Ano: v. 117, p. 202011243, 2020
Data da publicação	September 8, 2020
Formato da produção	Digital https://doi.org/10.1073/pnas.2011243117
Resumo	DICER is a key enzyme in microRNA (miRNA) biogenesis. Here we show that aerobic exercise training up-regulates DICER in adipose tissue of mice and humans. This can be mimicked by infusion of serum from exercised mice into sedentary mice and depends on AMPK-mediated signaling in both muscle and adipocytes. Adipocyte DICER is required for whole-body metabolic adaptations to aerobic exercise training, in part, by allowing controlled substrate utilization in adipose tissue, which, in turn, supports skeletal muscle function. Exercise training increases overall miRNA expression in adipose tissue, and up-regulation of miR-203-3p limits glycolysis in adipose under conditions of metabolic stress. We propose that exercise training-induced DICER-miR-203-3p up-regulation in adipocytes is a key adaptive response that coordinates signals from working muscle to promote whole-body metabolic adaptations.
Fomento	