Tipo	Periódico
Título	Anti-Migratory Effect of Dipotassium Glycyrrhizinate on Glioblastoma Cell Lines: Microarray Data for the Identification of Key MicroRNA Signatures
Autores	Gabriel Alves Bonafé, Jéssica Silva Dos Santos, Anna Maria Alves de Piloto Fernandes, Jussara Vaz Ziegler, Fernando Augusto Lima Marson, Thalita Rocha, Patricia de Oliveira Carvalho, Manoela Marques Ortega
Autor (es) USF	Gabriel Alves Bonafé, Jéssica Silva Dos Santos, Anna Maria Alves de Piloto Fernandes, Fernando Augusto Lima Marson, Patricia de Oliveira Carvalho, Manoela Marques Ortega
Autores Internacionais	
Programa/Curso (s)	Programa de Pós-Graduação Stricto Sensu em Ciências da Saúde
DOI	10.3389/fonc.2022.819599
Assunto (palavras chaves)	dipotassium glycyrrhizinate; glioblastoma; metastasis formation inhibition; miR-4443 and miR-3620; microRNA signature; nuclear factor kappa B pathway.
Idioma	Inglês
Fonte	Título do periódico: Front Oncol Volume/Número/Paginação/Ano: 12:819599, 2022
Data da publicação	2022 Aug 3
Formato da produção	Impressa ou digital
Resumo	The nuclear factor kappa B (NF-κB) pathway has been reported to be responsible for the aggressive disease phenomenon observed in glioblastoma (GBM). Dipotassium glycyrrhizinate (DPG), a dipotassium salt of glycyrrhizic acid isolated from licorice, has recently demonstrated an anti-tumoral effect on GBM cell lines U87MG and T98G through NF-κB suppression by IRAK2- and TRAF6-mediating microRNA (miR)-16 and miR-146a, respectively. Thus, the present study aimed to evaluate the expression profiles of miRNAs related to NF-κB suppression in T98G GBM cell line after DPG exposure using miRNA microarray (Affymetrix Human miRNA 4.0A), considering only predicted miRNAs as NF-κB regulator genes. Additional assays using U251 and U138MG cells were performed to validate the array results. DPG cytotoxicity was determined by (4,5-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide assay, and cellular apoptosis was quantified by DNA fragmentation and terminal deoxynucleotidyl transferase dUTP nick-end labeling (TUNEL) assay. The anti-proliferative effect was observed by cell proliferation and wound-healing assays, and the sphere formation assay examined whether DPG reduced stem cell subpopulation formation. The most over-expressed miRNAs were miR-4443 and miR-3620. The cytotoxic effect of DPG in U251 and U138MG was observed with an IC50 of 32 and 20 mM for 48 h, respectively. The IC50 of each cell line was used in all further assays. DPG treatment-induced

	apoptosis is observed by DNA fragmentation and increased TUNEL-positive cells. Cell proliferation and wound-healing assays showed an anti-proliferative and anti-migratory effect by DPG on the evaluated cell lines. In addition, DPG treatment led to a 100% reduction in sphere formation. The qPCR results in U251 and U138MG cells showed that DPG increased miR-4443 (2.44 vs. 1.11, p-value = 0.11; 8.27 vs. 1.25, p-value = 0.04) and miR-3620 expression (1.66 vs. 1.00, p-value = 0.03; 8.47 vs. 1.01, p-value = 0.03) and decreased CD209 (0.44 vs. 1.10, p-value = 0.03; 0.49 vs. 1.07, p-value = 0.04) and TNC (0.20 vs. 1.03, p-value = 0.001; 0.39 vs. 1.06, p-value = 0.01) mRNA levels compared to controls. Our results suggest that DPG inhibits cell viability by activating apoptosis and inhibiting cell proliferation and stem cell subpopulation formation through miR-4443 and miR-3620 upregulation. Both miRNAs are responsible for the post-transcriptional inhibition of NF-κB by CD209 and TNC modulation.
Fomento	