

Protein Phosphorylation Alterations in Myotonic Dystrophy Type 1: A Systematic Review

Adriana Costa, Ana C. Cruz, Filipa Martins * and Sandra Rebelo *

Institute of Biomedicine (iBiMED), Department of Medical Sciences, University of Aveiro, 3810-193 Aveiro, Portugal

* Correspondence: samartins@ua.pt (F.M.); srebelo@ua.pt (S.R.)

web of Question:

1. What is the impact of protein phosphorylation in myotonic dystrophy type 1?

Search strategy

PICO (Population, Intervention, Comparison, Outcome) **framework**

P= ("Myotonic dystrophy type 1" OR "Congenital Myotonic dystrophy" OR "Dystrophia Myotonica 1" OR "Myotonic Dystrophy 1" OR "Steinert Syndrome" OR "Steinert's disease" OR "Steinert myotonic dystrophy" OR "Myotonic dystrophy of Steinert" OR "Steinert's congenital myotonic dystrophy")

I= not applicable

C= not applicable

O= ("protein phosphorylation" OR "Phosphorylation" OR "Protein Kinases" OR "Kinases" OR "Protein phosphatases" OR "Phosphatases" OR "Myotonic Dystrophy Protein Kinase" OR "DMPK" OR "Phosphoprotein" OR "Phosphotarget" OR "Protein subunits" OR "phosphopeptide" OR "proteomic")

Databases

PubMed; Web of knowledge

Typical Search – performed in title, abstract and keywords (MESH terms in Pubmed)

Search with MESH terms

("Myotonic Dystrophy"[Mesh]) AND ("Phosphorylation/genetics"[Mesh] OR
 "Phosphorylation/physiology"[Mesh] OR "Protein Kinases/genetics"[Mesh] OR "Protein
 Kinases/metabolism"[Mesh] OR "Protein Kinases/physiology"[Mesh] OR "Phosphotransferases/genetics"[Mesh]
 OR "Phosphotransferases/metabolism"[Mesh] OR "Phosphotransferases/physiology"[Mesh] OR
 "Phosphoprotein phosphatases/genetics"[Mesh] OR "Phosphoprotein phosphatases/metabolism"[Mesh] OR
 "Phosphoprotein phosphatases/physiology"[Mesh] OR "Myotonin-Protein Kinase/genetics"[Mesh] OR
 "Myotonin-Protein Kinase/metabolism"[Mesh] OR "Myotonin-Protein Kinase/physiology"[Mesh] OR
 "Myotonin-Protein Kinase/deficiency"[Mesh] OR "Protein subunits/genetics"[Mesh] OR "Protein
 subunits/metabolism"[Mesh] OR "Protein subunits/physiology"[Mesh])

MESH terms (Pubmed):

Myotonic Dystrophy/
 Phosphorylation/genetics
 Phosphorylation/physiology
 Protein Kinases/genetics
 Protein Kinases/metabolism
 Protein Kinases/physiology
 Phosphotransferases/genetics
 Phosphotransferases/metabolism
 Phosphotransferases/physiology
 Phosphoprotein phosphatases/genetics
 Phosphoprotein phosphatases/metabolism
 Phosphoprotein phosphatases/physiology
 Myotonin-Protein Kinase/genetics
 Myotonin-Protein Kinase/metabolism
 Myotonin-Protein Kinase/physiology
 Myotonin-Protein Kinase/deficiency
 Protein subunits/genetics
 Protein subunits/metabolism
 Protein subunits/physiology

Inclusion criteria

- include animal models of myotonic dystrophy type 1
- Include cellular models of myotonic dystrophy type 1
- Include samples from patients with myotonic dystrophy type 1
- English language

Exclusion criteria

- studies involving proxy versions
- qualitative studies, news, research protocols, case studies, case reports, theses, dissertations, abstracts, letters to the editor, unpublished work, editorials, commentaries, books, book chapters, systematic reviews (references checked), guidelines, statements and position papers