Study of atrophy in Facioscapulohumeral muscular dystrophy (FSHD)

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Cascade of gene deregulation in FSHD

Atrophy/hypertrophy balance

Construction of reporter vectors

Effect of DUX4 on the FOXO1 promoter

Activation of the FOXO1 promoter in FSHD myoblasts

Site-directed mutagenesis of DUX4 putative binding sites

Conclusion and perspectives

The FOXO1 promoter is activated in FSHD myoblasts probably due to the DUX4 induction in these cells. The FOXO1 promoter is activated by DUX4 in a dose-dependent manner and we can observe a decrease in the luciferase activity following mutation of the DUX4 binding B site. However, DUX4 even following the mutation of the DUX4 binding sites. DUX4 is still able to activate the FOXO1 promoter activity independently of direct DUX4 binding. To confirm DUX4 binding to the FOXO1 promoter, we will perform chromatin immunoprecipitation.

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