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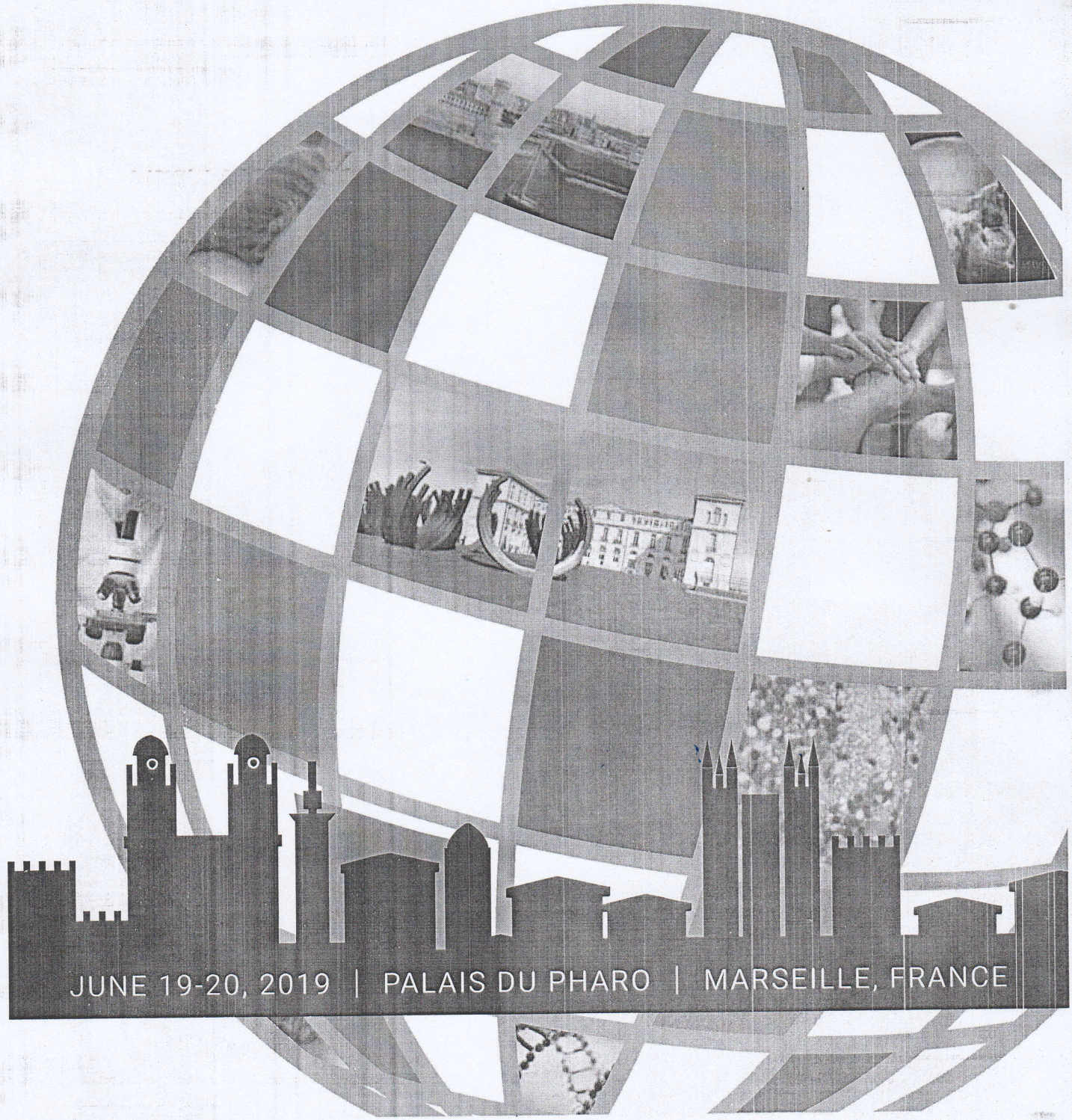
ABSTRACT BOOK



P16 Investigation of the Effect of Estrogen on DUX4/β-Katenin/PAX3-7 Protein Levels in Facioscapulohumeral Muscular Dystrophy (FSHD).

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Objective: In Facioscapulohumeral Dystrophy(FSHD) It is noteworthy that the findings progressed at an earlier age in men, and the disease worsens in postmenopausal women. Depending on these observations; the role of estrogen was investigated in the pathophysiology of FSHD.

Method: Primary FSHD1 myoblast cell lines prepared from biopsies of four individuals(63 and 71 years old(63yM/71yM)two males; 47 and 58 years old(47yF/58yF) two females) were used. Three different groups i) estradiol untreated control group, ii) 10 nM 30-minutes and iii) 10 nM 4-hours estradiol treatment were generated. Cell lysates from FSHD myoblasts in these groups were examined by western blot for the presence-amount of DUX4, PAX3/7 and β-catenin transcription factors.

Results: After estradiol treatment DUX4 protein level reduced to zero in 71yM, it wasn't detected in 63yM and 47yF. Because of ineffective attachment in 58yF, proteins weren't obtained. The level of β-catenin protein increased with estradiol in 71yM, 63yM and 47yF samples. 3 different protein bands of 80 kDa, 56 kDa and 45 kDa were determined for PAX3/7 proteins. Of these, 80 kDa and 56 kDa forms were observed only in 71yM; after estradiol 80-kDa PAX3/7 form reduced; 56-kDa PAX3/7 form was expressed at the 4th hour. The 45 kDa form was determined in all samples; with estradiol treatment this form decreased in 71yM-47yF and increased in 63yM.

Conclusion: The decrease in DUX4, the increase in β-catenin, stimulation in the expression of 56 kDa form of PAX3/7 protein family after 4 hours of estradiol treatment support the protective role of estrogen in FSHD pathophysiology. To understand the effect of estradiol on pathophysiology better and to develop treatment alternatives; extensive studies are needed with each transcription factor and related target genes; both at mRNA-protein levels.

Keywords: estradiol, DUX4, β-catenin, PAX3/7, FSHD (facioscapulohumeral muscular dystrophy)