

## MS03-P15 | NOVEL BIOCHEMICAL BASES FOR NUCLEAR FACTOR I X (NFI X)

Lapi, Michela (Università degli studi di Milano, Milano (MI), ITA)

My PhD project focuses on Nuclear Factor I X (NFI X), which is a transcription factor belonging to the NFI DNA-binding proteins family. NFI X plays an essential role in the development of several organs, most importantly skeletal muscle. It has been shown that upon NFI X inhibition in a dystrophic mice model there is an amelioration in the pathological features of the muscular dystrophy. Thus, these data demonstrated that the absence of NFI X protects from the progression of the disease *in vivo*. This study shed a light on the possible use of NFI X as a genetic tool to slow down the progress of muscular dystrophy, which is still incurable.

On these bases, my project aims of purifying and solving the novel structure of NFI X alone and in complex with its palindromic DNA consensus sequence. The goal of the study is to find small molecules able to inhibit NFI X transcriptional function.

During my PhD, I managed to find an acceptable protocol for expression and purification of truncated constructs of NFI X *via* a prokaryotic expression system. I was also able to find crystallization conditions suitable for NFI X-DNA complex, but I still have to work on crystals optimization. Moreover, I performed several biophysical analysis to better characterize the binding of NFI X to the target DNA and the protein stability.