Involvement of Fibulin-4 in activation mechanism of lysyl oxidase

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It has been revealed in our laboratory that several proteins are required for the formation of elastic fibers in addition to elastin, which is the main component, and to lysyl oxidase, which is a cross-linking enzyme. We reported that one of such proteins, Fibulin-4 (EGF containing fibulin-like extracellular matrix 2), interacts with lysyl oxidase precursor protein and tropoelastin and is essential for elastogenesis. In order to confirm the uptake of Fibulin-4 into cells, we searched for a membrane protein that binds to Fibulin-4 in the cell membrane. FLAG-tagged hFibulin-4 was added to Fibulin-4 KO MEF cells, followed by separation of the raft fraction and electrophoresis, bands with different expression levels were cut out, depending on the presence or absence of FLAG-tagged hFibulin-4, and were subject to TOF-MS/MS analysis. As a result, CD109 antigen was detected. CD109 antigen is a GPI-anchored protein and has been reported to suppress TGF-β signaling, but other functions are unknown. Currently, we are investigating whether the CD109 antigen binds to Fibulin-4 secreted outside the cell and is taken into the cell and involved in the LOX activation mechanism.