

**COVID-19 is an emerging, rapidly evolving situation.**

Get the latest public health information from CDC: <https://www.coronavirus.gov>

Get the latest research information from NIH: <https://www.nih.gov/coronavirus>

Find NCBI SARS-CoV-2 literature, sequence, and clinical content: <https://www.ncbi.nlm.nih.gov/sars-cov-2/>

FULL TEXT LINKS



*Matrix Biol.* 2020 Dec 26;S0945-053X(20)30119-0. doi: 10.1016/j.matbio.2020.12.004.

Online ahead of print.

## Autophagy in the mesh of collagen VI

Silvia Castagnaro <sup>1</sup>, Lisa Gambarotto <sup>1</sup>, Matilde Cescon <sup>1</sup>, Paolo Bonaldo <sup>2</sup>

Affiliations

PMID: 33373668 DOI: [10.1016/j.matbio.2020.12.004](https://doi.org/10.1016/j.matbio.2020.12.004)

### Abstract

Autophagy is a very versatile process through which the cell degrades damaged long-lived proteins, entire organelles, or pathogens, by engulfing them in characteristic double-membrane vesicles and conveying the cargo to lysosomes. It is a dynamic pathway tunable at multiple levels and responsive to nutrient and stress stimuli, also coming from the extracellular microenvironment and its remodeling. In the extracellular matrix, collagen type VI forms a distinctive set of beaded microfilaments that assemble into an intricate and multimodular meshwork of tightly linked proteins and surface receptors. When missing or defective, collagen VI triggers a series of pathological events in skeletal muscle and other tissues, with a remarkable impact on key cell processes, such as apoptosis and autophagy. In this review, we discuss the current knowledge about collagen VI regulation of autophagy in the different experimental models and human pathologies where it was studied, and provide some hints for future directions aimed at the fine dissection of this intriguing relationship, as well as its prospective translational impact for disease and therapy.

**Keywords:** Animal models; Autophagy; Collagen VI; Muscular dystrophies; Prospective therapies; Skeletal muscle.

Copyright © 2020. Published by Elsevier B.V.

### LinkOut – more resources

Full Text Sources

[Elsevier Science](#)