

The dynamic nature of autophagy in health and disease

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Macroautophagy is a highly regulated cellular process that serves to remove damaged proteins and organelles from the cell. Research during the last decade has made it increasingly clear that autophagy plays important roles in most of the major human diseases as well as in infection and immunity, with increasing evidence for selective autophagy of protein aggregates, organelles and pathogens (Levine et al., 2008). The purpose of autophagy is not the simple elimination of materials, but instead, autophagy serves as a dynamic recycling system that produces new building blocks and energy for cellular renovation and homeostasis. Here we provide a multidisciplinary sight of our current understanding of autophagy's role in metabolic adaptation, intracellular quality control, and renovation during development and differentiation.

References

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Keywords: Autophagy, mitochondria, cancer, neurodegenerative diseases, protein trafficking, endo-lysosomal proteases.