Mitochondrial dynamics, Mitophagy and Autophagy

Mitochondrial import protein pathway

- **Mitochondrial import pathway**
  - Proteins synthesized outside the mitochondrion are targeted to the mitochondrial matrix or intermembrane space.
  - **372_12_M BS** based in the mitochondrial IMS.
  - The majority of proteins in the mitochondrial matrix are inserted into the IMS through the TOM complex.
  - Biogenesis of mitochondrial inner membrane proteins involves the Translocase of the Outer Mitochondrial Membrane (TOM) complex.

Mitochondrial fusion & fission pathways

- **Mitochondrial fusion and fission dynamics**
  - Mitochondria exist in a dynamic network within living cells, thus undergoing continuous events of fusion and fission.
  - The mitochondrial outer membrane (OMM) comprises the outermost layer of the mitochnodria.
  - Fusion and fission are regulated by mitochondrial fission and fusion proteins.

Autophagy pathway

- **Mitophagy**
  - Mitophagy is the process of selective removal of damaged mitochondria by autophagosomes and subsequent degradation.
  - Mitochondria that are unable to maintain an appropriate balance of energy are subject to autophagic degradation.

Legend

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- **Autophagy**
  - Autophagy is a catabolic process that involves the degradation of long-lived proteins and cellular organelles.
  - It is an evolutionarily conserved process that occurs in all eukaryotic cells.

Discover more at abcam.com/mitochondrialdynamics