mTORC1

mTORC1, also known as mammalian target of rapamycin complex 1 or mechanistic target of rapamycin complex 1, is a protein complex that functions as a nutrient/energy/redox sensor and controls protein synthesis.

mTOR Complex 1 (mTORC1) is composed of mTOR itself, the regulatory-associated protein of mTOR (commonly known as raptor), mammalian lethal with SEC13 protein 8 (MLST8), PRAS40 and DEPTOR.

This complex embodies the classic functions of mTOR, namely as a nutrient/energy/redox sensor and controller of protein synthesis.

The activity of this complex is regulated by rapamycin, insulin, growth factors, phosphatidic acid, certain amino acids and their derivatives (e.g., l-leucine and β-hydroxy β-methylbutyric acid), mechanical stimuli, and oxidative stress.