

P003 The translationally controlled tumour protein TCTP is not rate-limiting for amino-acid-dependent regulation of the mammalian TORC1 pathway

Xuemin Wang¹, Ulrich-Axel Bommer² and Christopher G. Proud¹

¹ Department of Biochemistry & Molecular Biology, University of British Columbia, Vancouver, BC, V6T1Z3, Canada ² Graduate School of Medicine, University of Wollongong, NSW 2522, Australia

Mammalian target of rapamycin (mTOR) is at the heart of a complex cell signalling network that integrates growth signals and energy and amino acid availability to regulate protein synthesis. mTOR forms two types of complexes, mTORC1 and mTORC2. The former is stimulated by amino acids and insulin. Insulin inactivates TSC2, the GTPase-activating protein for the small GTPase Rheb, which activates mTORC1. It remains unclear how amino acids regulate mTORC1. *Drosophila* TCTP was recently reported to act as a guanine nucleotide-exchange factor for Rheb. We investigated the role of TCTP in mammalian TORC1 signalling and its control by amino acids. Knocking down TCTP did not reproducibly impair mTORC1 signalling in amino acid-replete or insulin-stimulated HEK293 cells, as monitored by phosphorylation of the downstream targets initiation factor 4E binding proteins (4E-BP1/2) and ribosomal protein S6. Furthermore, overexpressing TCTP did not rescue mTORC1 signalling, suggesting that amino acid-starvation does not make TCTP limiting for mTORC1 signalling. These studies indicate that, in contrast to the situation in *Drosophila*, TCTP appears not to be involved in regulation of TORC1 signalling in mammalian cells.