

P022 Essential role of hIST1 in cytokinesis
**Monica Agromayor¹, Jez G. Carlton¹, John P. Phelan²,
Katherine Bowers² and Juan Martin-Serrano¹**

*1-Department of Infectious Diseases, King's College
London School of Medicine*

*2- Institute of Structural and Molecular Biology, Division of
Biosciences, University College London*

IST1 has recently been described as a new positive modulator of the ESCRT pathway but an essential function of this highly conserved protein has not been identified. Here, we describe the previously uncharacterized KIAA0174 as the human homologue of *IST1* (hIST1) and we report its conserved interaction with VPS4, CHMP1A, CHMP1B and LIP5. We also identify a MIT domain interacting motif (MIM) in hIST1 that is necessary for its interaction with VPS4, LIP5 and other MIT domain-containing proteins, namely MITD1, AMSH, UBPY and Spastin. Importantly, hIST1 is essential for cytokinesis in mammalian cells but not for HIV-1 budding, thus providing a novel mechanism of functional diversification of the ESCRT machinery. Lastly, we show that the hIST1 MIM activity is essential for cytokinesis, suggesting possible mechanisms to explain the role of hIST1 in the last step of mammalian cell division.