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Title: Molecular mechanisms of novel regulators in cytokine signal transduction

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Propositions

1. By promoting monoubiquitination of SMAD6 in a temporal manner, UBE2O promotes BMP7-induced adipocyte differentiation in C3H10T1/2 cells. (this thesis)
2. Inhibition of polyubiquitination of TRAF6 by UBE2O does not require the ubiquitin-conjugating activity of UBE2O. (this thesis)
3. The continuous USP4-TRAF6 association in the absence of ligand indicates that USP4 is required to keep TRAF6-mediated NF- κ B signaling in the suppressed state. (this thesis)
4. The fact that only combined knockdown of LRP5, LRP6 and LRP8 almost completely abolishes Wnt3a-induced signaling, in contrast to single gene knockdown, suggests that LRP5, LRP6 and LRP8 have some redundant functions. (this thesis)
5. BMP2, 4, 6, 7 and 9 effectively induce adipogenic differentiation of mesenchymal stem cells both *in vitro* and *in vivo*. (Q Kang et al *Stem Cells Dev* 2009 May; 18(4): 545-59)
6. Instead of targeting proteins for degradation through the proteasome pathway, monoubiquitylation regulates processes that range from membrane transport to transcriptional regulation. (L Hicke *Nature Rev Mol Cell Bio* 2001 Mar; 2(3): 195-201)
7. The unique biological function of TRAF6 compared to the other TRAFs is largely a product of its distinct specificity for upstream receptors and signaling proteins, which is determined by its unique TRAF-C domain (H Wu et al *Bioessays* 2003 Nov; 25(11): 1096-105)
8. LRP5 and LRP6 are only partially redundant because their functions together are required for mouse gastrulation. (BT Macdonald et al *Dev Cell* 2009 Jul; 17(1): 9-26)
9. Is it not delightful to acquire knowledge and put it into practice from time to time? (Kong Zi *Analects*, 400BC)
10. Study well and make progress everyday. (Mao Zedong, 1951 May)
11. Although the road ahead will be endless, I will still pursue the truth in the world. (Qu Yuan *The lament*, 300BC)