Title: Protein Ubiquitination in Cancer Progression

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Abstract

We have previously demonstrated that USP24 is involved in cancer progression. Here, we found that USP24 expression was upregulated in M2 macrophages and lung cancer cells. Conditioned medium from USP24-knockdown M2 macrophages decreased the migratory and chemotactic activity of lung cancer cells and the angiogenic properties of human microvascular endothelial cell 1 (HEMC-1). IL-6 expression was significantly decreased in USP24-knockdown M2 macrophages and lung cancer cells, and IL-6-replenished conditioned medium restored the migratory and chemotactic properties of the cells. USP24 stabilizes p300 and β-TrCP to increase the levels of histone-3 acetylation and NF-κB, and decrease the levels of DNMT1 and IκB, thereby increasing IL-6 transcription in M2 macrophages and lung cancer cells. IL-6 has previously been a target for cancer drug development. Here, we provide direct evidence to support that USP24 promotes IL-6 expression, which might be beneficial for cancer therapy.