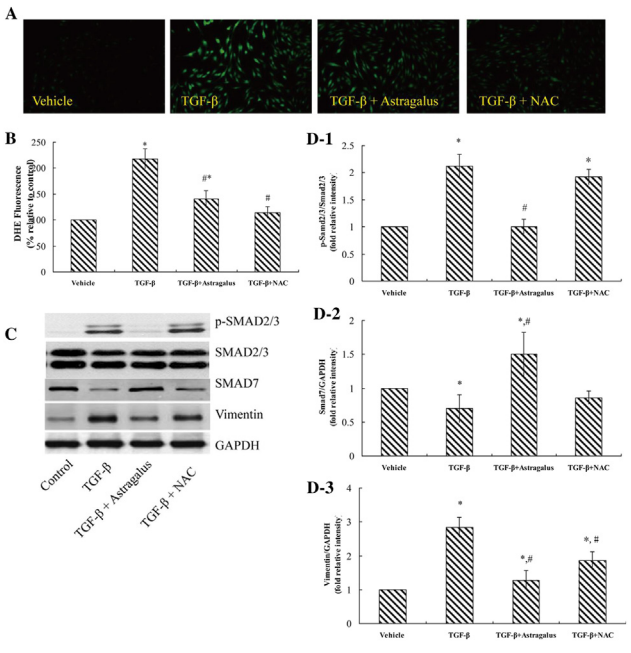

Figure 5. Effects of Astragaloside IV on reactive oxygen species (ROS) production, activation of Smad2/3 and expression of Smad7 in TGF-β1-treated HMrSV5 cells. Cells were divided into a vehicle group (cells treated with 0.1% DMSO), a TGF-β1 group (cells treated with 10 ng/ml TGF-β1), an AS-IV + TGF-β1 group (cells pretreated with AS-IV at 400 μg/ml 2 h prior to 2 ng/ml TGF-β1) and an NAC + TGF-β1 group (cells pretreated with NAC at 100 nM 2 h prior to 2 ng/ml TGF-β1). After incubation for 24 h, DCFH-DA fluorescence in cultured cells was analyzed by fluorescence microscopy (A). The quantification of fluorescence intensity is presented in the bar graphs (B). Representative immunoblots of p-Smad, Smad2/3, Smad7 and Vimentin are shown in (C), and GAPDH served as a loading control. Relative intensity of p-Smad/Smad2/3, Smad7/GAPDH and vimentin/GAPDH is shown in (D). *p < 0.05 vs. vehicle group, #p < 0.05 vs. TGF-β1 group, n = 3.

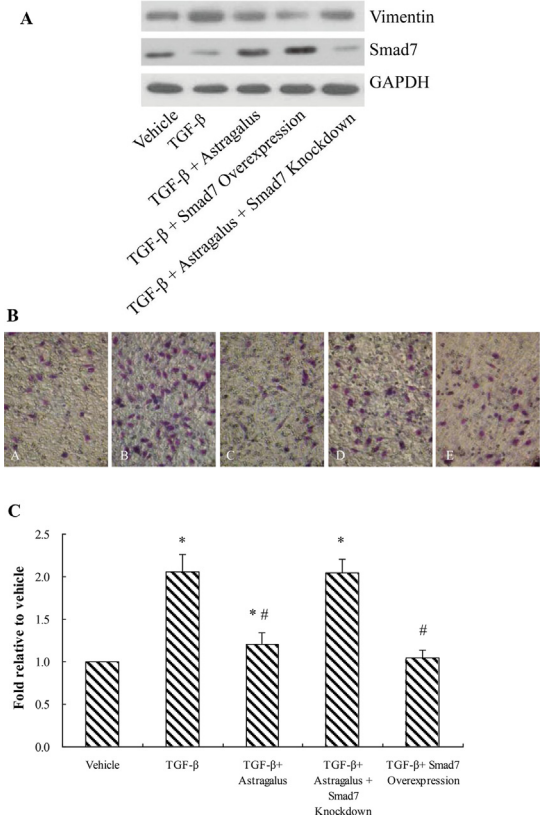

Figure 6. Effect of Smad7 on TGF-β1-induced EMT in HMrSV5 cells. Cells were divided into a vehicle group (cells treated with 0.1% DMSO), TGF-β1 group (cells treated with 2 ng/ml TGF-β1), TGF-β1+ AS-IV group (cells pretreated with AS-IV at 400 μg/ml 2 h prior to 2 ng/ml TGF-β1), TGF-β1+Smad7 overexpression group (after Smad7 enforced expression using a Smad7-overexpression lentivirus, cells were treated with 2 ng/ml TGF-β1) and TGF-β1 + AS-IV + Smad7 knockdown group (after Smad7 deletion using a Smad7-inhibitor lentivirus, cells were pretreated with AS-IV at 400 μg/ml 2 h prior to 2 ng/ml TGF-β1). After incubation for 24 h, the levels of vimentin, Smad7 and GAPDH (loading control) were analyzed by western blot (Fig. 6A). The migrating cells were detected by Giemsa staining (Fig.6B). A. vehicle group; B. TGF-β1 group; C. TGF-β1+ AS-IV group; D. TGF-β1 + AS-IV + Smad7 knockdown group; E. TGF-β1+Smad7 overexpression group. The quantification of the migrating cells is expressed graphically as a relative fold increase of the vehicle (Fig. 6C). Six random fields for each insert were counted, and three independent experiments were performed in each group. *p < 0.05 vs. vehicle group, #p < 0.05 vs. TGF-β1 group, n = 3.

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Predictors of Functional Status in Maintenance Hemodialysis Patients

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Objective: Hemodialysis (HD) patients frequently developed functional impairment. The study used logistic regression analysis to identify predictors for functional impairment in HD patients.
Methods: The study is a 5-year retrospective observational design. Patients who received regular HD in a large HD center in southern Taiwan were enrolled. Complete demographic data were available in 1166 patients for the study period (2009 to 2013).
Karnofsky Performance Status Scale (KPS) score was used to quantify functional status yearly in HD patients. A total 3509 KPS scores in person-visit were collected. Clinical variables including demographics, laboratory data, HD vintage were analyzed by logistic regression model for identification predictors for functional status.
Results: The regression model yielded nineteen predictors those were statistically significant ($p < 0.05$). Further analysis with logistic regression model with selected interaction showed older age, higher Hct, BUN, and glucose levels will significance increase in the log-odds of getting low KPS score level in person-visit. For interaction results, the combination of older age with higher albumin level, higher creatinine level with longer HD treatment year will significance decrease in the log-odds of getting low KPS score level in person-visit.
Conclusion: Age, serum albumin and creatinine levels, HD treatment years are the main factors to influence functional status in HD patients.

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Prevalence and Risk Factors of Depression and Sleep Disturbance in Continuous Ambulatory Peritoneal Dialysis Patients

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Objective: Depression and sleep disturbance are known to be potentially risk factors that are associated with adverse outcomes including mortality in end-stage renal disease (ESRD) patients. The severity of depression symptoms and sleep disturbance following the start of dialysis treatment are independent predictors of survival. The present study attempted to assess the prevalence and related risk factors of depression and sleep disturbance among continuous ambulatory peritoneal dialysis (CAPD) patients in Guangzhou, southern China.
Methods: A total of 57 patients on CAPD were enrolled in Memorial hospital of Sun Yat-Sen University. Beck depression inventory (BDI) and Pittsburgh Sleep Quality Index (PSQI) were applied to all patients for evaluating depression and sleep quality respectively. Linear regression was performed to investigate the associations between clinical data and BDI score, as well as PSQI score.