SUPPLEMENTARY FIGURE LEGENDS

Figure S1: Detail of the gene signature of Ral-dependent transcription and molecular concepts. Detail of the gene signature of Ral-dependent transcription and molecular concepts visualized in **Figure 1A**. Genes present in the Ral signature (yellow box) and at least two of the visualized concepts are shown (green indicates presence of the gene in the concept). Concepts are numbered as in **Figure 1A.**

Figure S2: Evaluation of CD24 and HIF1a expression in response to hypoxia and Deferoxamine in human bladder and prostate cancer cells A) UMUC-3 cells were exposed to hypoxia for 3, 6, 12, 24 and 36 hours. Lysates were collected and analyzed for HIF1α and CD24 protein expression. Bottom panel: Real-time PCR analysis was performed to quantitate corresponding HIF1α and CD24 mRNA. *Significant difference compared to samples at 0h ($p<0.01$). **B)** LNCaP and KU-7 cells were exposed to hypoxia for 0, 6, 12 and 24 hour Lysates were collected and analyzed for CD24 protein expression. **C)** UMUC-3 cells were treated with 50μM Deferoxamine (DFO) for various durations as indicated and were examined for both HIF-1α and CD24 protein as well as mRNA levels. **A-C)** Blots are representative of three separate experiments. Error bars are SD of triplicate samples from one of three independent experiments. * Significant difference to the samples at 0h ($p<0.05$). Blots are representative of three separate experiments. Error bars are SD of triplicate samples from one of three independent experiments.

Figure S3: The CD24 promoter cloned from human prostate and bladder cells. Comparison of the CD24 promoter that we cloned from prostate and bladder cells with all the previously published sequences for the CD24 promoter in which several mismatches and deletions were observed.

Figure S4: Western blot and ChIP for HIF-1β in human bladder cancer cells. A). i) Western blot of lysates collected from GL-2 and HIF-1β siRNA (Dharmacon Smartpool) transfected UMUC-3 cells exposed to hypoxia analyzed to determine HIF-1β antibody specificity. ii) HIF1α and HIF-1β immunoprecipitates from UMUC-3 cells exposed to hypoxia were probed with anti-HIF1α and anti-HIF-1β antibody respectively. **B).** ChIP assay was performed as explained in Figure 3C. HIF-1β immunoprecipitation was performed using specific anti-HIF-1β antibody. Primers spanning the HIF-1 binding region on CD24 promoter was used for quantitative real-time PCR amplification. The bars represent the normalized abundance of CD24 promoter region in these immunoprecipitated samples in normoxic versus hypoxic condition. IgG and Pol-II bars indicate the PCR amplification obtained when extracts were immunoprecipitated with a nonimmune mouse immunoglobulin and an antibody raised against the RNA polymerase II (Pol2 II).

Figure S5: Effects of CD24 and HIF1a depletion on in vitro and in vivo growth and metastasis of bladder and prostate cancer cells. A). Lysates collected from UMUC-3 and PC-3 cells transduced with lentiviral particles containing CD24 shRNA or NT shRNA in PLKO1/ vector were analyzed for CD24 protein expression. Blots are representative of three separate experiments **B)** Monolayer cell growth of 1000 cells / well in 96 well plate was estimated for these shRNA cells using “Live-Dead” assay (Molecular Probes) as described. *<0.05. **C).** Monitoring of metastatic burden for 3, 4 and 5 weeks by bioluminescence method. CD24 depleted (shRNA, CD24sh-3 in panel B) PC-3 cells and their respective non-target controls were injected via intracardiac route (n=10). Before scanning animals were injected with luciferin intraperitoneally as described in methods **D).** Lysates collected from UMUC-3 cells transduced with lentiviral particles containing HIF1α shRNA or NT shRNA in PLKO1/ vector were analyzed for HIF1α protein expression**. E).** Monolayer cell growth of 1000 cells / well in 96 well plate was estimated for these shRNA cells using “Live-Dead” assay. *<0.05.