

Supplementary Table 1. List of genes differentially expressed in DID+/CD44^{bright} and DID-/CD44^{bright} cells sorted from primary oral lesions from SCC25 orthotopic tumours (**a**), or Detroit orthotopic tumours (**c**). The common DID+ signature in SCC25 and Detroit tumours is shown in (**e**). **b**, **d**, show the top categories of biological processes and pathways up-regulated in the DID-cells.

Supplementary Table 2. a, List of differentially expressed genes in CD36+/CD44^{bright} cells compared to CD36-/CD44^{bright} cells sorted from primary oral tumours generated by Detroit and VDH002 OSCC cells and GO analysis showing the top biological process (**b**) and pathways (**c**) up-regulated in the CD36-/CD44^{bright} cells.

Supplementary Table 3. Glucose levels and weight of HFD-fed mice as compared to control-diet mice analysed 4 weeks after OSCC injection.

Supplementary Table 4. Metastasis-initiating cell (MIC) frequency and tumour-initiating cell (TIC) frequency, determined by limiting dilution assay. Increased number of injected tumour cells, number of recipient mice and number of mice with metastases (**a**) or primary tumours (**b**).

Supplementary Table 5. List of differentially expressed genes in CD36+/CD44^{bright} cells compared to CD36-/CD44^{bright} cells sorted from oral tumours generated by parental Detroit cells (**b**), and in CD36+/CD44^{bright} cells compared to CD36-/CD44^{bright} cells sorted from lymph node metastases generated by orthotopic inoculation of CD36+/CD44^{bright} Detroit cells (**a**). **c**, shows the enriched pathways in the common signature shared by LN-Met CD36+ cells and PT CD36+ cells.

Supplementary Table 6. Weight of the animals after a three-week period of daily administration of JC63.1 or IgA. Doses (5, 10 or 20 ug/100 μ l⁻¹) are indicated in brackets.

Supplementary Table 7. a, List of blood parameters measured from mice inoculated with oral tumours and either left untreated, or treated with daily intraperitoneal injections with control IgA antibody, or JC63.1 anti-CD36 (both at 10 μ g/100 μ l). **b**, Weights of body, spleen, kidney and liver, and liver levels of transaminases GOT-AST and GPT-ALT, from C3H/HeJ mice either untreated or after a three-week period of daily administration of monoclonal anti-CD36 JC63.1 or the corresponding IgA control isotype. Blood counts for mice: WBC, white blood cells; MID, medium size cells; RBC, red blood cells; HGB, hemoglobin; HCT, haematocrit

Supplementary Table 8. Tables showing *P* values, hazard ratios, mean times and sample size for each type of tumor. lusc, lung squamous cell carcinoma; br, breast cancer luminal A; bl, bladder carcinoma; dfs, disease free survival; os, overall survival; sign, signature.

Supplementary Table 9. Short hairpin sequences (shRNA) for the different genes.

shRNA CD36	SEQUENCE
TRCN0000056998	5' GAAGTTACATATTAGGCCAT 3'
TRCN0000056999	5' CCGACGTTAATCTGAAAGGA 3'

shRNA ACSL1	SEQUENCE
V3THS_313936	5' TAAATATGTGCTTTTCCG 3'

Supplementary Table 10. PCR primer pairs used.

K164A (Lys164mut)	SEQUENCE
K164A Fw	5' CTGACTTGGAACATAGAAGATTTTG ACGCGTTAATAAGTGAATTGAGGATCA TTTG 3'
K164A Rv	5' CAAATGATCCTCAATTCATTATTAA CGCGTCAAAATCTTCTATGTTCCAAGT CAG 3'

GFP forward	5' AGT GCT TCA GCC GCT ACC 3'
GFP reverse	5' GAA GAT GGT GCG CTC CTG 3'
Internal positive control forward (mApob)	5' CAC GTG GGC TCC AGC ATT 3'
Internal positive control reverse (mApob)	5' TCA CCA GTC ATT TCT GCC TTT G 3'

Supplementary Table 11. Taqman gene expression probes for the different genes.

GENE	Assay ID
ATF3	Hs00231069_m1
ATP6V0A4	Hs00220986_m1
B2M	Hs00187842_m1
CARD18	Hs01043258_m1
CCNA2	Hs00996786_m1
CCNB	Hs01030099_m1
CCL5	Hs00982282_m1
CD36	Hs01567185_m1 Hs01567195_m1
CDKN1A	Hs99999142_m1
CFLAR	Hs00153439_m1

FBXO32	Hs01041408_m1
HMOX1	Hs01110250_m1
ID1	Hs03676575_s1
IGFBP3	Hs00426289_m1
JUNB	Hs00357891_s1
KLK6	Hs00160519_m1
MMP9	Hs00234579_m1
MYEOV	Hs00993153_g1
POSTN	Hs01566734_m1
PTGES	Hs01115610_m1
S100A7	Hs00161488_m1
S100A8	Hs00374264_g1
S100A9	Hs00610058_m1
SH3BP2	Hs00610068_m1
SPRR1B	Hs00234164_m1
Sox9	Hs01001343_g1
SPARC	Hs01076127_m1
AQP3	Hs01105469_g1
EPHA2	Hs00171656_m1
LIPH	Hs00975890_m1
ACSL1	Hs00960561_m1
CPT1A	Hs00912671_m1
CPT2	Hs04188816_m1
HADHA	Hs00426191_m1
HADHB	Hs01027271_m1