

Supplementary Table 1: Antibodies and experimental conditions for Multiplexed sequential immunofluorescence.

Antibody	References	Species	Clone	Dilution
α -Actin smooth muscle antibody	M0851 (Dako)	Mouse	1A4	1:400
α -FH	12748-1-1P (ProteinTech)	Rabbit	Polyclonal	1:100
α -CA9	ab243660 (Abcam)	Rabbit	EPR23055-5	1:100
α -Ki67	7240 (Dako)	Mouse	MIB1	1:50

Supplementary Table 2: Antibodies and experimental conditions for Western Blot experiments.

Reducing/ Non-reducing	Gel %	Antigen	Dilution & Primary Ab Source	Dilution & Secondary Source
Reducing	4-12% / 10%	FH	1:1000 (α -human FH Quidel, catalog no. A312) / 1:1000 (<i>in house</i> Biotinylated α -human FH Quidel, catalog no. A312)	1:20.000 (Peroxidase AffiniPure™ Bovine Anti-Goat IgG (H+L), JacksonImmunoResearch, catalog no. 805-035-180) / 1:1000 Streptavidin-HRP (Dako, catalog no. P0397)
Reducing / Non-reducing	4-12% / 10%	β -actin	1:10.000 (ThermoFisher Scientific, catalog no. MA1-140)	1:10.000 (Goat anti-Mouse IgG (Heavy Chain) Secondary Antibody HRP, ThermoFisher Scientific, catalog no. 31430)
Non-Reducing	4-12%	GAPDH	1:50.000 (Proteintech, catalog no. 60004-1-Ig)	1:10.000 (Goat Anti-Mouse IgG, Human ads-HRP, Southern Biotech, catalog no. 1030-05)
Non-Reducing	4-12%	Cytochrome c	1:1000 (Proteintech, catalog no.66264-1-Ig)	1:10.000 (Goat Anti-Mouse IgG, Human ads-HRP, Southern Biotech, catalog no. 1030-05)
Non-Reducing	4-12%	Histone 3	1:2000 (Proteintech, catalog no. 17168-1-AP)	1:10.000 (Goat anti-Rabbit IgG (H+L) Cross-Adsorbed Secondary Antibody, HRP, ThermoFisher Scientific, catalog no. G-21234)
Non-Reducing	10%	p53	1:200 (DO-1, SantaCruz, catalog no. sc126)	1:1000 (Anti-mouse IgG (H+L) antibody [HRP], Covalab, catalog no. lab0365)
Non-Reducing	10%	P-p53 (s46)	1:200 (R&Dsystems, catalog no. mAb1489)	1:5000 (Goat anti-Rabbit IgG (H+L) Cross-Adsorbed Secondary Antibody, HRP, ThermoFisher Scientific, catalog no. G-21234)
Reducing	4-12%	E2F3	1:1000 (Proteintech, catalog no. 27615-1-AP)	1:10.000 (Goat anti-Rabbit IgG (H+L) Cross-Adsorbed Secondary Antibody, HRP, ThermoFisher Scientific, catalog no. G-21234)
Reducing	4-12%	CapZ β	1:4000 (Proteintech, catalog no. 25043-1-AP)	1:10.000 (Goat anti-Rabbit IgG (H+L) Cross-Adsorbed Secondary Antibody, HRP, ThermoFisher Scientific, catalog no. G-21234)

Supplementary Table 3: FH significant interactors in A498 ccRCC cells and BJ fibroblasts.

A498 FH Interacting Candidates C18/3 mAb				BJ FH Interacting Candidates C18/3 mAb				A498 FH Interacting Candidates OX24 mAb			
Gene Names	UniProt ID	Log2(CFH/IgCtrl)	Log2(CFH/IgCtrl) Significance A p-value	Gene Names	UniProt ID	Log2(CFH/IgCtrl)	Log2(CFH/IgCtrl) Significance A p-value	Gene Names	UniProt ID	Log2(CFH/IgCtrl)	Log2(CFH/IgCtrl) Significance A p-value
GNPDA2	Q8TDQ7			GTPBP2	Q9BX10	9.87512	4.81004E-05	TTC28	Q96AY4	26.5497	2.4056E-242
GNPDA1	P46926	25.2355	2.89E-140					RPL22	P35268	26.3816	2.517E-239
TFDP1	Q14186	25.1099	6.68E-139	TXNDC15	Q96J42	9.5695	7.90604E-05	CXorf56	Q9H5V9	25.1727	3.6266E-218
RPL22	P35268	24.8676	2.75E-136					BAR1	Q99728	23.577	9.4225E-192
E2F3	O00716	24.4108	1.99E-131	RB1	P06400	8.44164	0.000437907	RAP1A	P62834		
E2F4	Q16254	24.2355	1.38E-129	NARS2	Q96I59	8.28201	0.00054942	RAP1B	P61224	23.3818	1.2261E-188
CXorf56	Q9H5V9	24.0302	1.90E-127					CARKD	Q8IW45	23.3014	2.3032E-187
CREB1	P16220	23.5942	5.77E-123	TJP1	Q07157	8.12704	0.000682284	UQCC1	Q9NVA1	22.6041	1.7223E-176
MCM5	P33992	23.5211	3.20E-122	LAMP3	Q9UQV4	7.9065	0.000922882	CAPZA2	P47755	21.7078	5.3715E-163
SCAF4	O95104	23.3664	1.18E-120					FXR1	P51114		
GABRD	O14764	23.3652	1.21E-120	MTCL1	Q9Y4B5	7.77558	0.00110035	FXR2	P51116	21.3824	3.1218E-158
RAP1A	P62834			E2F3	O00716	7.42528	0.00173976	ALOX12B	O75342	21.3066	3.9325E-157
RAP1B	P61224	23.1119	4.23E-118					PMS2P11	Q13670	21.1533	6.3948E-155
FHOD1	Q9Y613	23.0664	1.20E-117	GTF3C4	Q9UKN8	7.02333	0.00287792	BRD4	O60885		
WRNIP1	Q96S55	22.505	4.03E-112					BRD3	Q15059	21.1525	6.565E-155
OTUD4	Q01804	22.3419	1.53E-110	CYFIP1	Q7L576			SLC7A5	Q01650	21.1179	2.0623E-154
CAPZA2	P47755	22.2679	7.91E-110	CYFIP2	Q96F07	6.97068	0.00306865	IGFBP3	P17936	20.3456	1.5816E-143
ARFGAP2	Q8N6H7	22.1392	1.36E-108					CORIN	Q9Y5Q5	20.1929	2.0095E-141
ALOX12B	O75342	22.1054	2.86E-108	SPTBN1	Q01082	6.71271	0.00417773	VCL	P18206	20.1567	6.3042E-141
VWA8	A3KMH1	21.9352	1.19E-106	LIMA1	Q9UHB6	6.61374	0.00469057	PML	P29590	19.1518	1.701E-127
SPRR1B	P22528	21.9252	1.48E-106	CRY1	Q16526	6.59282	0.00480592	TJP1	Q07157	18.3827	1.12E-117
RAB11FIP5	Q9BXF6	21.9149	1.85E-106					DHFR	P00374	17.9398	3.3303E-112
TSNAXIP1	Q2TAA8	21.8389	9.69E-106	TFDP1	Q14186	6.58033	0.00487593	CFH	P08603	7.23557	3.75401E-20
PXDN	Q92626	21.8374	1.00E-105					RFC1	P35251	3.71901	1.11502E-06
UQCC1	Q9NVA1	21.7324	9.74E-105	CFH	P08603	6.5477	0.00506332	INPPL1	O15357	3.41426	6.77481E-06
FXR1	P51114			MCM5	P33992	6.4331	0.00577307	NARS2	Q96I59	2.94922	8.14069E-05
FXR2	P51116	21.7067	1.70E-104					TBC1D1	Q86TI0	2.69562	0.00027599
PPP1R12C	Q9BZL4	21.6054	1.51E-103	PTK7	Q13308	6.13001	0.0080926	HDLP	Q00341	2.59239	0.000441557
TFDP2	Q14188	21.5724	3.06E-103	DEK	P35659	6.11123	0.00826015	HIST1H2BD	P58876		
TJP1	Q07157	21.4315	6.24E-102	FARP1	Q9Y4F1	6.02837	0.00903626	HIST1H2BL	Q99880		
BRD4	O60885							HIST1H2BM	Q99879		
BRD3	Q15059	21.3066	8.88E-101					HIST1H2BN	Q99877		
GDI2	P50395	21.0011	5.52E-98					HIST1H2BH	Q93079	2.517	0.000616236
SLC7A5	Q01650	20.8656	9.30E-97					HIST2H2BF	Q5QNW6		
IDH2	P48735	20.7933	4.16E-96					HIST1H2BC	P62807		
VCL	P18206	20.7405	1.24E-95					H2BFS	P57053		
BRI3BP	Q8WY22	20.5317	9.03E-94					HIST1H2BK	O60814		
CAMSAP2	Q08AD1	20.4854	2.33E-93					CAPZB	P47756	2.48651	0.000703535
ARHGEF40	Q8TER5	20.4207	8.69E-93					RAC1	P63000		
SPATS2	Q86XZ4	19.8427	9.35E-88					RAC3	P60763	2.4777	0.000730776
CORIN	Q9Y5Q5	19.8093	1.81E-87					RAC2	P15153		
E2F1	Q01094	19.1363	8.43E-82					GNG12	Q9UBI6	2.36205	0.00119124
OR8D2	Q9GZM6	19.1222	1.10E-81					HBB	P68871	2.09501	0.00341932
IGFBP3	P17936	18.8554	1.72E-79					HBD	P02042		
ARHGAP22	Q7Z5H3	18.3569	1.78E-75					LSM12	Q3MHD2	2.06614	0.00380862
LCE1B	Q5T7P3							RPL28	P46779	2.00638	0.00474337
LCE1C	Q5T751	18.1323	1.05E-73					DPYSL2	Q16555	1.96073	0.00558988
UIMC1	Q96RL1	17.659	4.90E-70					ARPC1B	O15143	1.86233	0.00788441
DHFR	P00374	16.9925	4.92E-65								
HDLP	Q00341	9.57872	3.36E-22								
NARS2	Q96I59	9.09668	3.16E-20								
MCM3	P25205	8.06494	2.47E-16								
TRIOBP	Q9H2D6	6.92426	1.49E-12								
GTF3C4	Q9UKN8	6.73335	5.66E-12								
CFH	P08603	6.48522	3.03E-11								
MTCL1	Q9Y4B5	6.33495	8.16E-11								
HS2ST1	Q7LGA3	6.12465	3.14E-10								
TBC1D1	Q86TI0	6.10167	3.62E-10								
METTL15	A6NJ78	5.76888	2.78E-09								
SPATS2L	Q9NUQ6	5.62087	6.63E-09								
CCDC96	Q2M329	5.36454	2.85E-08								
GTPBP2	Q9BX10	5.05687	1.51E-07								
CACTIN	Q8WUQ7	4.8359	4.74E-07								
DHX9	Q08211	4.71174	8.82E-07								
DHX29	Q7Z478	3.82807	4.81E-05								
ESRRA	P11474	3.60445	0.000117698								
CAPZB	P47756	3.52621	0.000159201								
GBA	P04062	2.67769	0.00292419								
PPP2R1A	P30153	2.50401	0.00489061								
RB1	P06400	2.42075	0.00619769								
CAPZA1	P52907	2.36988	0.00714085								

Supplementary Table 4: Kinetics of interaction between Factor H and the different intracellular FH interacting proteins.

	k_a $\text{mol}^{-1}\text{s}^{-1}$	k_d s^{-1}	Rmax (RU)	K_d μM	Ionic strength
E2F3	$4,12\text{e}^4$	0,00451	17,8	0,11	Normal
C3b	$2,81\text{e}^5$	0,0101	101	0,036	Low
E2F3	$6,3\text{e}^4$	0,0167	67,8	0,265	Low
CAPZB	$4,14\text{e}^4$	0,0226	40,8	0,546	Low
CREB1	$9,1\text{e}^4$	0,019	7,54	0,209	Low

Supplementary Table 5: Kinetics of interaction between Factor H fragment FH6-8Y and FH18-20 and the different intracellular FH interacting proteins.

	<u>FH6-8Y</u>				<u>FH18-20</u>				
	k_a $\text{mol}^{-1}\text{s}^{-1}$	k_d s^{-1}	Rmax (RU)	K_d μM	k_a $\text{mol}^{-1}\text{s}^{-1}$	k_d s^{-1}	Rmax (RU)	K_d μM	Ionic strength
E2F3	$1,37\text{e}^4$	0,00652	50,2	0,477	-	-	-	-	Normal
E2F3	$4,78\text{e}^5$	0,00989	108	0,0207	$8,54\text{e}^4$	0,0186	357	0,218	Low
CAPZB	$1,05\text{e}^5$	0,00931	139	0,0888	$6,24\text{e}^4$	0,0168	334	0,27	Low
CREB1	$6,23\text{e}^4$	0,00972	375	0,156	$3,04\text{e}^4$	0,0106	573	0,348	Low