

**Table S1**

Analysis of the 2D motility parameters “percentage of motile cells” and “average speed” for AGS, Hs746T, LMSU and MKN1 cells. The numbers of analyzed films (n), the mean and the standard deviation (SD) of the percentage of motile cells (motility) and the average speed are shown

<b>AGS</b>	<b>Untreated</b>	<b>EGF [5 ng/ml]</b>	<b>EGF + Cetuximab [1 µg/ml]</b>	<b>EGF + Cetuximab [50 µg/ml]</b>	<b>Cetuximab [1 µg/ml]</b>	
<b>n</b>	5	4	4	5	3	
<b>Motility [%]</b>						
Mean	96.26	99.43	96.87	96.78	96.44	
SD	3.82	1.14	3.19	3.81	1.94	
<b>Speed [µm/h]</b>						
Mean	45.00	61.33	48.91	48.94	41.02	
SD	9.82	7.03	4.00	12.42	7.76	
<b>Hs746T</b>	<b>Untreated</b>	<b>EGF [5 ng/ml]</b>	<b>EGF + Cetuximab [1 µg/ml]</b>	<b>EGF + Cetuximab [50 µg/ml]</b>	<b>Cetuximab [1 µg/ml]</b>	
<b>n</b>	8	8	8	7	5	
<b>Motility [%]</b>						
Mean	86.84	84.16	83.19	86.25	79.64	
SD	8.85	11.02	8.56	9.71	12.57	
<b>Speed [µm/h]</b>						
Mean	39.73	38.69	36.90	41.96	43.19	
SD	8.30	11.06	7.54	7.05	5.63	
<b>LMSU</b>	<b>Untreated</b>	<b>EGF [5 ng/ml]</b>	<b>EGF + Cetuximab [1 µg/ml]</b>	<b>EGF + Cetuximab [50 µg/ml]</b>	<b>Cetuximab [1 µg/ml]</b>	
<b>n</b>	3	3	3	3	3	
<b>Motility [%]</b>						
Mean	68.29	79.52	63.55	69.49	67.88	
SD	2.40	5.98	36.28	16.22	10.56	
<b>Speed [µm/h]</b>						
Mean	35.44	38.99	36.36	40.48	37.97	
SD	4.34	3.96	7.34	7.16	0.75	
<b>MKN1</b>	<b>Untreated</b>	<b>EGF [5 ng/ml]</b>	<b>EGF + Cetuximab [0.05 µg/ml]</b>	<b>EGF + Cetuximab [0.1 µg/ml]</b>	<b>EGF + Cetuximab [1 µg/ml]</b>	<b>Cetuximab [1 µg/ml]</b>
<b>n</b>	5	7	6	6	6	5
<b>Motility [%]</b>						
Mean	49.81	54.25	43.71	43.06	38.23	32.48
SD	5.04	8.70	8.52	8.19	10.13	15.46
<b>Speed [µm/h]</b>						
Mean	13.88	17.21	15.61	15.60	14.43	13.98
SD	1.62	3.10	1.76	3.14	3.61	3.06

**Table S2**

Pairwise comparisons of the parameter “percentage of motile cells” between different treatment conditions for AGS, Hs746T, LMSU and MKN1 cells. Cells were treated with EGF and/or cetuximab. Welch t-test was used. Significant p-values are shown.

Abbreviations: EGF 5: 5 ng/ml EGF; Cet 0.1: 0.1 µg/ml cetuximab; Cet 1: 1 µg/ml cetuximab; Cet 50: 50 µg/ml cetuximab

Cell line	Groups (X vs. Y)		Mean ± SD (X)	Mean ± SD (Y)	p-value
	X	Y			
MKN1	-	EGF 5 + Cet 1	49.81 ± 5.04	38.23 ± 10.13	0.041
	EGF 5	EGF 5 + Cet 0.1	54.25 ± 8.70	43.06 ± 8.19	0.036
	EGF 5	EGF 5 + Cet 1	54.25 ± 8.70	38.23 ± 10.13	0.013
	EGF 5	Cet 1	54.25 ± 8.70	32.48 ± 15.46	0.030

**Table S3**

Pairwise comparisons of the parameter “average speed” between different treatment conditions for AGS, Hs746T, LMSU and MKN1 cells. Cells were treated with EGF and/or cetuximab. Welch t-test was used. Significant p-values are shown.

Abbreviations: EGF 5: 5 ng/ml EGF; Cet 1: 1 µg/ml cetuximab

Cell line	Groups (X vs. Y)		Mean ± SD (X)	Mean ± SD (Y)	p-value
	X	Y			
AGS	-	EGF 5	45.00 ± 9.82	61.33 ± 7.03	0.023
	EGF 5	EGF 5 + Cet 1	61.33 ± 7.03	48.91 ± 4.00	0.030
	EGF 5	Cet 1	61.33 ± 7.03	41.02 ± 7.76	0.022
MKN1	-	EGF 5	13.88 ± 1.62	17.21 ± 3.10	0.038

**Table S4**

Pairwise comparisons of the invasion potential between different treatment conditions for AGS, Hs746T, LMSU and MKN1 cells. Cells were treated with EGF and/or cetuximab. Two-sided Welch t-test and one-sample t-test were used. Significant p-values are shown.

Abbreviations: EGF 5: 5 ng/ml EGF; Cet 0.1: 0.1 µg/ml cetuximab; Cet 1: 1 µg/ml cetuximab; Cet 50: 50 µg/ml cetuximab

Cell line	Groups (X vs. Y)		Mean ± SD (X)	Mean ± SD (Y)	p-value
	X	Y			
<b>AGS</b>	-	Cet 1	100.000	141.939 ± 13.258	0.032
	EGF 5	Cet 1	89.362 ± 15.654	141.939 ± 13.258	0.012
<b>MKN1</b>	-	EGF 5	100.000	522.327 ± 177.368	0.006
	-	EGF 5 + Cet 0.1	100.000	349.438 ± 188.038	0.041
	EGF 5	EGF 5 + Cet 1	522.327 ± 177.368	159.823 ± 81.449	0.007
	EGF 5	Cet 1	522.327 ± 177.368	88.069 ± 19.558	0.005
	EGF 5 + Cet 0.1	Cet 1	349.438 ± 188.038	88.069 ± 19.558	0.035

**Table S5**

Pairwise comparisons of the EGFR, MAPK and AKT activation between different treatments in MKN1 cells. Cells were treated with EGF and/or cetuximab. Welch t-test was used. Significant p-values of relevant comparisons are shown.

Abbreviations: EGF 5: 5 ng/ml EGF; Cet 0.05: 0.05 µg/ml cetuximab; Cet 0.1: 0.1 µg/ml cetuximab; Cet 1: 1 µg/ml cetuximab; Cet 10: 10 µg/ml cetuximab

Activation of protein		Groups (X vs. Y)		Mean ± SD (X)	Mean ± SD (Y)	p-value		
		X	Y					
EGFR	1 min	EGF 5 + Cet 0.05	EGF 5 + Cet 10	1.991 ± 0.196	0.669 ± 0.326	0.007		
			Cet 0.05	1.991 ± 0.196	0.263 ± 0.056	0.002		
		EGF 5 + Cet 0.1	EGF 5 + Cet 10	2.219 ± 0.345	0.669 ± 0.326	0.005		
			Cet 0.1	2.219 ± 0.345	0.236 ± 0.053	0.009		
	3 min	EGF 5	EGF 5 + Cet 1	2.478 ± 0.449	1.056 ± 0.317	0.014		
			EGF 5 + Cet 10	2.478 ± 0.449	0.472 ± 0.126	0.012		
			Cet 10	2.478 ± 0.449	0.118 ± 0.066	0.011		
		EGF 5 + Cet 0.05	EGF 5 + Cet 1	3.137 ± 0.763	1.056 ± 0.317	0.028		
			EGF 5 + Cet 10	3.137 ± 0.763	0.472 ± 0.126	0.024		
			Cet 0.05	3.137 ± 0.763	0.175 ± 0.0418	0.021		
		EGF 5 + Cet 0.1	EGF 5 + Cet 10	1.991 ± 0.530	0.472 ± 0.126	0.032		
			Cet 0.1	1.991 ± 0.530	0.149 ± 0.050	0.026		
			EGF 5 + Cet 1	1.056 ± 0.317	0.149 ± 0.050	0.036		
		EGF 5 + Cet 10	Cet 10	0.472 ± 0.126	0.118 ± 0.066	0.023		
			15 min	EGF 5	EGF 5 + Cet 1	2.808 ± 0.250	0.860 ± 0.492	0.009
					EGF 5 + Cet 10	2.808 ± 0.250	0.376 ± 0.076	0.002
	EGF 5 + Cet 0.05	EGF 5 + Cet 1		2.293 ± 0.407	0.860 ± 0.492	0.019		
		EGF 5 + Cet 10		2.293 ± 0.407	0.376 ± 0.076	0.012		

			Cet 0.05	2.293 ± 0.407	0.154 ± 0.025	0.012
		EGF 5 + Cet 0.1	EGF 5 + Cet 10	1.939 ± 0.607	0.376 ± 0.076	0.045
			Cet 0.1	1.939 ± 0.607	0.128 ± 0.049	0.035
		EGF 5 + Cet 10	Cet 10	0.376 ± 0.076	0.163 ± 0.095	0.041
	4 h	EGF 5 + Cet 0.05	Cet 0.05	2.249 ± 0.801	0.311 ± 0.167	0.047
<b>MAPK</b>	3 min	EGF 5 + Cet 10	Cet 10	1.113 ± 0.166	0.619 ± 0.184	0.026
	15 min	EGF 5 + Cet 0.05	Cet 0.05	1.549 ± 0.377	0.727 ± 0.316	0.046
		EGF 5 + Cet 0.1	Cet 0.1	1.544 ± 0.215	0.491 ± 0.089	0.007
		EGF 5 + Cet 1	Cet 1	1.503 ± 0.448	0.315 ± 0.207	0.028
		EGF 5 + Cet 10	Cet 10	1.263 ± 0.186	0.372 ± 0.389	0.040
	4 h	EGF 5 + Cet 0.1	Cet 0.1	1.467 ± 0.435	0.274 ± 0.205	0.026
		EGF 5 + Cet 1	Cet 1	1.438 ± 0.257	0.223 ± 0.137	0.005
<b>AKT</b>	1 min	0	Cet 10	0.881 ± 0.014	1.056 ± 0.067	0.040
	3 min	EGF 5 + Cet 0.05	Cet 0.05	1.361 ± 0.189	0.779 ± 0.088	0.019
	15 min	EGF 5 + Cet 0.05	Cet 0.05	1.578 ± 0.453	0.549 ± 0.335	0.038
		EGF 5 + Cet 0.1	EGF 5 + Cet 10	1.379 ± 0.185	0.913 ± 0.151	0.029
			Cet 0.1	1.379 ± 0.185	0.502 ± 0.152	0.004
		EGF 5 + Cet 1	Cet 1	1.333 ± 0.333	0.516 ± 0.147	0.035

**Table S6**

Pairwise comparisons of the EGFR, MAPK and AKT activation between different treatments in Hs746T cells. Cells were treated with EGF and/or cetuximab. Welch t-test was used. Significant p-values of relevant comparisons are shown.

Abbreviations: EGF 5: 5 ng/ml EGF; Cet 1: 1 µg/ml cetuximab; Cet 50: 50 µg/ml cetuximab

Activation of protein	Groups (X vs. Y)		Mean ± SD (X)	Mean ± SD (Y)	p-value	
	X	Y				
AKT	3 min	EGF 5	EGF 5 + Cet 1	1.169 ± 0.050	0.950 ± 0.088	0.030
			EGF 5 + Cet 50	1.169 ± 0.050	0.971 ± 0.026	0.008
	4 h	0	EGF 5	0.812 ± 0.059	1.113 ± 0.038	0.003
			Cet 1	0.812 ± 0.059	0.961 ± 0.051	0.031

**Table S7**

Statistical values of activation of the EGFR signaling components pAKT, pCREB, pFAK and pMAPK in the gastric cancer cell lines Hs746T and MKN1.

Cells were treated for 4h with EGF and/or cetuximab. Listed are all relevant and significant values.

The Welch t-test was used to compare values.

Abbreviations: EGF 30: 30 ng/ml EGF; Cet 1: 1 µg/ml cetuximab

Activation of protein	Cell line	Groups (X vs. Y)		Mean ± SD (X)	Mean ± SD (Y)	p-value
		X	Y			
<b>AKT</b>	Hs746T	EGF 30 + Cet 1	Cet 1	0.881 ± 0.173	1.207 ± 0.136	0.043
	MKN1	-	EGF 30	0.973 ± 0.173	1.569 ± 0.068	0.017
		EGF 30	EGF 30 + Cet 1	1.569 ± 0.068	0.997 ± 0.075	0.001
<b>CREB</b>	Hs746T	-	EGF 30	1.225 ± 0.205	0.726 ± 0.092	0.036
		-	EGF 30 + Cet 1	1.225 ± 0.205	0.756 ± 0.198	0.046
	MKN1	-	Cet1	1.077 ± 0.188	0.453 ± 0.075	0.018
<b>FAK</b>	MKN1	-	EGF 30	0.844 ± 0.175	1.218 ± 0.104	0.044
		-	EGF 30 + Cet 1	0.844 ± 0.175	1.257 ± 0.108	0.034
<b>MAPK</b>	Hs746T	EGF 30	EGF 30 + Cet 1	1.131 ± 0.095	0.882 ± 0.041	0.030
	MKN1	-	EGF 30	0.938 ± 0.125	1.475 ± 0.120	0.006
		-	Cet 1	0.938 ± 0.125	0.238 ± 0.206	0.012