

**Table S1: 454 results of the miRNA content in AGS cells in basal conditions and upon *H. pylori* infection (MirBase 14.0).**

MiRNA studied in this paper are represented in bold. *P*-values are calculated using Fisher's exact test.

MiRNA name	Number of reads		<i>P</i> -value
	AGS	AGS + Hp	
<b>hsa-miR-372</b>	<b>2814</b>	<b>1595</b>	<b>5.1075 x 10<sup>-13</sup></b>
hsa-miR-27b	1735.5	1057.5	0.00020114
hsa-miR-200b	1564	1211	0.00800858
hsa-miR-23a	1202	1115	5.7139 x 10 <sup>-12</sup>
hsa-miR-92a	1117	709	0.03455711
hsa-miR-23b	1071	920	4.3226 x 10 <sup>-6</sup>
hsa-miR-200c	1007	1014	9.8946 x 10 <sup>-17</sup>
hsa-miR-17	978.333313	738.333374	0.12693797
hsa-miR-16	971	662	0.5729942
<b>hsa-miR-371-5p</b>	<b>919</b>	<b>562</b>	<b>0.00916823</b>
hsa-miR-20a	896.333313	602.333313	0.42291853
<b>hsa-miR-371-3p</b>	<b>558</b>	<b>433</b>	<b>0.1170863</b>
hsa-let-7a	557.5	590.5	2.3337 x 10 <sup>-12</sup>
hsa-miR-15b	533	465	0.00055788
hsa-miR-103	518.5	249	4.6014 x 10 <sup>-7</sup>
hsa-miR-107	489.5	234	8.3897 x 10 <sup>-7</sup>
hsa-miR-93	458	258	0.00458602
hsa-miR-21	447	312	0.97033239
hsa-let-7f	392.5	322.5	0.03191492
hsa-miR-25	391	302	0.21319636
hsa-miR-27a	388.5	292.5	0.36659655
hsa-miR-320d	362.666687	166.666672	3.6934 x 10 <sup>-6</sup>
hsa-miR-320c	336.666687	150.666672	2.7853 x 10 <sup>-6</sup>
<b>hsa-miR-373</b>	<b>331</b>	<b>137</b>	<b>8.3668 x 10<sup>-8</sup></b>
hsa-miR-151-5p	265	178	0.66276123
hsa-miR-106b	255.5	183	0.84559503
hsa-miR-361-5p	252	172	0.80434631
hsa-miR-1297	221	168	0.4379612
hsa-let-7b	215	182.5	0.06510962
hsa-miR-24	195	145	0.61872525
hsa-let-7d	193	189	0.00118367
hsa-miR-26a	164	113.5	0.9026762
hsa-miR-125a-5p	160	80	0.01247193

hsa-miR-1308	155	199	$1.3647 \times 10^{-8}$
hsa-miR-99b	129	70	0.08366475
hsa-miR-7	123	57	0.00972107
hsa-let-7g	122	131	0.00083166
hsa-miR-191	121	74	0.38182701
hsa-miR-106a	117.333336	91.3333359	0.48037254
hsa-miR-222	117	63	0.09514082
hsa-miR-320a	116.666664	29.6666679	$1.2526 \times 10^{-7}$
hsa-miR-374b	113	138	$1.1196 \times 10^{-5}$
hsa-miR-15a	94	41	0.01089894
hsa-miR-203	93	58	0.50840016
hsa-miR-1827	93	92.5	0.01675523
hsa-miR-22	84	60	0.93253546
hsa-let-7e	79.5	69.5	0.18197681
hsa-miR-19b	77	19	$1.0072 \times 10^{-5}$
hsa-miR-221	66	39	0.42801578
hsa-miR-182	65	18	0.00020488
hsa-miR-30b	65	34	0.18408001
hsa-miR-30d	63	37	0.41711646
hsa-miR-532-3p	63	34	0.25591646
hsa-miR-34a	60	34	0.34621697
hsa-miR-194	59	46	0.62017894
hsa-miR-151-3p	50	45	0.25106272
hsa-miR-1307	50	28	0.35921821
hsa-miR-30c	44	29	0.81332648
hsa-miR-26b	43	49.5	0.01523789
hsa-miR-378	43	18	0.06861116
hsa-miR-185	40	20	0.23882918
hsa-miR-29a	38	29	0.80404246
hsa-miR-423-3p	36	23	0.79199639
hsa-miR-532-5p	36	23	0.79199639
hsa-miR-141	34	16	0.19857956
hsa-miR-1979	33	13	0.09815114
hsa-miR-148a	27	27	0.21353774
hsa-miR-190	27	11	0.1395019
hsa-miR-425	26	13	0.33475349
hsa-miR-183	25	27	0.12270808
hsa-miR-455-3p	24	8	0.07233645
hsa-miR-720	23	10	0.22044175
hsa-miR-30e	21	9	0.26633076
hsa-miR-130b	20	3	0.00522039
hsa-miR-502-3p	20	9	0.34587705
hsa-miR-590-3p	18	9	0.44123845

hsa-miR-10a	17	4	0.04532705
hsa-miR-195	16	12	0.85033946
hsa-miR-374a	16	12	0.85033946
hsa-miR-28-5p	15	17	0.20840921
hsa-let-7i	15	12	0.84540483
hsa-miR-18a	14	4	0.14905045
hsa-miR-192	14	9	1
hsa-miR-92b	14	4	0.14905045
hsa-miR-140-3p	13	6	0.48801277
hsa-miR-429	13	8	0.82817109
hsa-miR-652	13	14	0.32829731
hsa-miR-421	13	17	0.09615495
hsa-miR-365	12	10	0.67243146
hsa-miR-501-3p	12	4	0.21416522
hsa-miR-942	12	4	0.21416522
hsa-miR-28-3p	11	12	0.29679702
hsa-miR-31	11	6	0.80635255
hsa-miR-135b	11	6	0.80635255
hsa-miR-484	11	7	1
hsa-miR-497	11	1	0.01965782
hsa-miR-500	11	4	0.30286431
hsa-miR-886-5p	11	6	0.80635255
hsa-miR-98	10	16	0.04509122
hsa-miR-301a	10	2	0.13943931
hsa-miR-362-5p	10	6	0.80620105
hsa-miR-362-3p	10	7	1
hsa-miR-96	9	1	0.05453144
hsa-miR-128	9	16	0.02492443
hsa-miR-130a	9	6	1
hsa-miR-1274b	9	2	0.13885849
hsa-miR-101	8	7	0.79432724
hsa-miR-210	8	13	0.07409052
hsa-miR-324-3p	8	8	0.61278049
hsa-miR-345	8	1	0.09109875
hsa-miR-1275	8	10	0.23737726
hsa-miR-1280	8	4	0.7714738
hsa-miR-186	7	3	0.53945125
hsa-miR-330-3p	7	5	1
hsa-miR-1301	7	3	0.53945125
hsa-miR-454	7	3	0.53945125
hsa-miR-1975	7	0	0.04643186
hsa-miR-215	6	7	0.40474737
hsa-miR-200a	6	6	0.56783778
hsa-miR-361-3p	6	6	0.56783778
hsa-miR-339-5p	6	1	0.25175261

hsa-miR-671-5p	6	3	0.74471826
hsa-miR-744	6	1	0.25175261
hsa-miR-302b	5.66666651	1.83333337	0.48349435
hsa-miR-132	5	3	1
hsa-miR-1303	5	4	1
hsa-miR-1268	5	3	1
hsa-miR-19a	4	1	0.65491635
hsa-miR-29c	4	1	0.65491635
hsa-miR-324-5p	4	0	0.14820995
hsa-miR-486-5p	4	6	0.33572563
hsa-miR-146b-5p	4	2	1
hsa-miR-574-3p	4	3	1
hsa-miR-615-3p	4	2	1
hsa-miR-877	4	3	1
hsa-miR-302e	3.66666627	1.33333337	0.65491516
hsa-miR-302f	3.66666627	1.33333337	0.65491516
hsa-miR-196a	3	2	1
hsa-miR-197	3	7	0.10382156
hsa-miR-125a-3p	3	1	0.64773039
hsa-miR-149	3	3	0.69576509
hsa-miR-574-5p	3	0	0.2730918
hsa-miR-584	3	3	0.69576509
hsa-miR-1226	3	0	0.2730918
hsa-miR-1261	3	3	0.69576509
hsa-miR-218	2	0	0.51539453
hsa-miR-140-5p	2	1	1
hsa-miR-296-3p	2	0	0.51539453
hsa-miR-375	2	0	0.51539453
hsa-miR-148b	2	3	0.40893409
hsa-miR-331-3p	2	1	1
hsa-miR-423-5p	2	4	0.23774553
hsa-miR-486-3p	2	0	0.51539453
hsa-miR-501-5p	2	0	0.51539453
hsa-miR-502-5p	2	0	0.51539453
hsa-miR-505	2	1	1
hsa-miR-573	2	0	0.51539453
hsa-miR-548c-5p	2	1	1
hsa-miR-660	2	0	0.51539453
hsa-miR-935	2	4	0.23774553
hsa-miR-519c-5p	1.5	0.5	1
hsa-miR-519b-5p	1.5	0.5	1
hsa-miR-32	1	0	1
hsa-miR-181b	1	0	1
hsa-miR-199b-5p	1	0	1
hsa-miR-204	1	0	1

hsa-miR-219-5p	1	0	1
hsa-miR-152	1	0	1
hsa-miR-184	1	1	1
hsa-miR-302a	1	0	1
hsa-miR-330-5p	1	0	1
hsa-miR-331-5p	1	2	0.57274506
hsa-miR-339-3p	1	4	0.16689864
hsa-miR-335	1	2	0.57274506
hsa-miR-193b	1	2	0.57274506
hsa-miR-181d	1	0	1
hsa-miR-518b	1	0	1
hsa-miR-455-5p	1	1	1
hsa-miR-550	1	0	1
hsa-miR-624	1	0	1
hsa-miR-628-5p	1	1	1
hsa-miR-641	1	0	1
hsa-miR-642	1	2	0.57274506
hsa-miR-643	1	0	1
hsa-miR-767-5p	1	0	1
hsa-miR-1283	1	0	1
hsa-miR-874	1	0	1
hsa-miR-301b	1	0	1
hsa-miR-1180	1	0	1
hsa-miR-1246	1	3	0.31291113
hsa-miR-1257	1	0	1
hsa-miR-1259	1	0	1
hsa-miR-1274a	1	2	0.57274506
hsa-miR-548i	1	1	1
hsa-miR-664	1	2	0.57274506
hsa-miR-2110	1	0	1
hsa-miR-2277	1	2	0.57274506
hsa-miR-2278	1	1	1
hsa-let-7c	0.5	4.5	0.02887547
hsa-miR-20b	0.5	0	1
<b>Total (reads)</b>	25348	17778.5	

**Table S2: miRNA listed in regards of their known function.**

MiRNA counting more than 100 reads (>0.4% reads) correspond to those of Figure 1.

<b>Hypoxia</b>		
<b>miRNA</b>	<b>Number of reads in AGS cells</b>	<b>References</b>
miR-23a	1202	[1, 2]
miR-92a	1117	[1-3]
miR-17	978	[1-3]
miR-20a	896	[1-3]
miR-21	447	[1, 2]
miR-373	331	[1, 2, 4]
miR-26a	164	[1, 2]
miR-191	121	[1, 2]
miR-19b	77	[1-3]
miR-30d	63	[1, 2]
miR-18a	14	[1-3]
miR-192	14	[1, 2]
miR-210	8	[1, 2, 5]
miR-200a	6	[1, 2]
miR-19a	4	[1-3]
miR-181b	1	[1, 2]
<b>Total (reads)</b>	<b>5443</b>	
<b>Total (%)</b>	<b>21</b>	

<b>Stem cell signature</b>		
<b>Embryonic stem cell</b>		
<b>miRNA</b>	<b>Number of reads in AGS cells</b>	<b>References</b>
miR-372	2814	[6, 7]
miR-200c	1007	
miR-371-5p	919	
miR-371-3p	558	
miR-21	447	
miR-373	331	
miR-222	117	
miR-374b	113	
miR-374a	16	
miR-301a	10	
miR-301b	1	
<b>Sum (reads)</b>	<b>6333</b>	
<b>Sum (%)</b>	<b>25.5</b>	
<b>Somatic stem cells</b>		
<b>miRNA</b>	<b>Number of reads in AGS cells</b>	<b>References</b>
miR-17	978	[6, 7]
miR-16	971	
miR-20a	896	
miR-103	518	

miR-107	489	
miR-24	195	
miR-106a	117	
miR-128	9	
miR-181b	1	
<b>Sum (reads)</b>	<b>4174</b>	
<b>Sum (%)</b>	<b>16.5</b>	
<b>Total (reads)</b>	<b>10507</b>	
<b>Total (%)</b>	<b>41.4</b>	

**Table S3: *H. pylori* strains used in this study.**

<b>Name</b>	<b>Origin</b>	<b>Characteristics</b>	<b>References</b>
CIP 106780	CIP Pasteur	26695 sequenced reference strain	[8]
CagA-1	derived of 26695 strain	HP0547:: <i>aphA3</i> ; Km <sup>R</sup>	this study
CagE-1	derived of 26695 strain	HP0544:: <i>aphA3</i> ; Km <sup>R</sup>	this study
P12	T. Meyer	P12 sequenced reference strain	Laboratory stock
SS1	H. de Reuse		Laboratory stock
X47-2AL			Laboratory stock

**Table S4: Oligonucleotides used in this study.**

Sequences are given in 5'→3' direction. For LNA antisenses small letters indicate DNA, whereas capital letters indicate LNA. Antisense miRNA is abbreviated as a number of the miRNA. Sequences homologous to the *aphA-3'* kanamycin resistance cassette gene are shown in italics, lower case letters.

Oligo	Sequence	Used for	Gene	Name	References	
FD142	<i>gttagtcacccgggtac</i> GTGTCTTTGAACATTCTTATT	Mutant construction (Rev)	HP0547	cagA	This study	
FD143	CAAGCAAAAACAAACCCAAGCTGATCAGAG	Mutant construction (Fwd)	HP0547	cagA		
FD144	<i>tacctggaggggaataatg</i> GGATTAAGGAATACCAAAAAC	Mutant construction (Fwd)	HP0547	cagA		
FD145	CTTAGGATCGTAAAATTGCGAGGTATTTTGG	Mutant construction (Rev)	HP0547	cagA		
FD146	CGACGCTTTTGGTTGTAAC	Mutant construction (Fwd)	HP0547	cagA		
FD152	<i>gttagtcacccgggtac</i> CCCTCTCTTTATAGATATACC	Mutant construction (Rev)	HP0544	cagE		
FD153	GAAAAAACACTCCCAATGGGCTTGTTTAT	Mutant construction (Fwd)	HP0544	cagE		
FD154	<i>tacctggaggggaataatg</i> CAAAGCATCACTGATCTTTTG	Mutant construction (Fwd)	HP0544	cagE		
FD155	GAAAACTATCCAAAATCGTCAAGACATCA	Mutant construction (Rev)	HP0544	cagE		
FD156	GTAATAAAAACTGAGAGGC	Mutant construction (Fwd)	HP0544	cagE		
FD70	GTACCCGGGTGACTAACTAGG	Mutant construction (Fwd)	<i>aphA3'</i>	Kanamycin		
FD71	CATTATTCCCTCCAGGTACTA	Mutant construction (Rev)	<i>aphA3'</i>	Kanamycin		
F-LATSUTR	AAAACCTCGAGCTTAGATGGGGGCCAGGCACCCCCA	EGFP-3'UTR LATS2 construction				
R-LATSUTR	AAAAGGATCCATTATTGCACAGAGATTTCTCATCAATGT					
CS60	acGctCaaAtgTcgCagCacTtt	LNA Northern blot probe and as372		miR-372		
CS61	acAccCcaAaaTcgAagCacTtc	LNA Northern blot probe and as373		miR-373		
CS16	CACGAATTTGCGTGTCATCCTT	LNA Northern blot probe	<i>RNU6-1</i>	U6 snRNA		
CS63	caCgtAcaTagTgcAccGatCtt	LNA antisense control		scramble miR-372		
CS64	caCacCacAatAgcAacGcaTtc			scramble miR-373		
3Fw-primiR371	AGTTTGCAGTGAGCCGAGAT	qPCR		primiR-371-372-373		
3Rev-primiR371	ATACAGCCCTTGGTCACAG			primiR-371-372-373		
LATS2-Rev	CCCGCACAATCTGCTCATTTC			LATS2	LATS2	[9]
LATS2-Fw	CAGGATGCGACCAGGAGATG					
Fw-P0	GCGACCTGGAAGTCCAAC			<i>RPLP0</i>	P0	This study
Rev-P0	CCATCAGCACCACAGCCTTC					
372-RNA	AAAGUGCUGCGACAUUUGAGCGU	mimic 372	<i>hsa-miR-372</i>	miR-372	This study	
372*-RNA	CUCAAUGUGGAGCACUAUUCU			<i>hsa-miR-372*</i>		miR-372*
373-RNA	GAAGUCUUCGAUUUUGGGUGU	mimic 373	<i>hsa-miR-373</i>	miR-373		
373*-RNA	ACUCAAAAUGGGGCGCUUCC			<i>hsa-miR-373*</i>		miR-373*



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