Supplementary information S1 (table) | Reported antisense transcripts and their targets

Sense–antisense transcripts	Proposed function or disease relevance	Suggested mechanism	Species	Ref.
BACE1 and BACE1-AS	Alzheimer's disease	Stability	H, M	[1]
APOE and APOE-AS1	Alzheimer's disease	Not known	H, M	[2]
PU.1 and PU.1-AS	Haematopoiesis	Translational block	H, M	[3]
Δ5-desaturase and reverse Δ5-desaturase	Fatty acid metabolism	Translational block, transcriptional interference, mRNA stability	H, R	[4]
P15 and P15-AS	Tumour suppressor	Chromatin modification	H	[5]
P21 and P21-AS	Tumour Suppressor	Chromatin modification	H	[6]
NKx2.2 and NKx2.2-AS	Neuronal cell differentiation	Not known	H	[7]
Zfh-5 and zfh-5AS	Transcription factor	Not known	H, M	[8]
Progesteron receptor and PR-AS	PR activation / inhibition	Promoter activation/inhibition through heterochromatin protein 1	H	[9]
HAR1F and HAR1R	Neuro-development	Not known	H	[10]
WT1 and WT1-AS	Kidney development	Methylation	H, M	[11]
BDNF and BDNFOS	Neurotrophic factor	RNA duplex formation	P	[12,13]
PINK1 and naPINK1	Mitochondrial function	Not known	H	[14]
FMR1 and ASFMR1	Fragile X mental retardation	Epigenetic changes	H, M	[15,16]
EPO-R and asEPO-R	Lung growth	Stability, translation	H, C	[17]
Ghrelin and ghrelinOS	Anxiety, depression	Not known	H	[18]
Rad 18 and NAT-Rad18	Apoptosis	Post-transcriptional control	H, R	[19]
HFE and HFE antisense RNA	Iron storage disorder	Translation repression	H	[20]
Zeb2 and Zeb2 NAT	Epithelial–mesenchymal transition	Splicing	H, M	[21,22]
TSP1 and TSP1-AS	Platelet aggregation	Not known	H	[23]
Urocortin, Ucn and Ucn-AS	Neuro-transmission	Post-transcriptional	R	[24]
Sphk1 and Khps1	Calcium mobilization	Demethylation	H, R	[25]
Pdcd2 and Tbp	Apoptosis	Editing, alternative splicing and polyadenylation	H, M, Ch	[26]
Msh4 and Hspa5	Meiotic DNA recombination	RNA degradation	M	[27]
Pax6 and Pax6OS Pax2 and Pax2OS Six3 and Six3OS Six6 and Six6OS Otx2 and Otx2OS Crx and CrxOS Rax and RaxOS Vax2 and Vax2OS	Eye development	Not known	M, H	[28]

Hyaluronan synthase 2 and HASNT	Hyaluronan biosynthesis	Not known	M, H	[29]
Msx1 and Msx1_AS	Skeletal terminal differentiation	Splicing, imprinting	R, H	[30]
FGF-2 and FGF-AS (bFGF and bFGF-AS)	Haematological tumours, endometriosis	Polyadenylation, translational block, editing, stability	Mm	[31-34]
p53	Differentiation	Transport	M	[35]
N-myc	Oncogenesis	Splicing	M, H	[36]
Tsix and Xist	X chromosome inactivation	X inactivation	Mm	[37]
HIF-1α and aHIF	Poor prognosis marker in breast cancer, renal cancer	RNA destabilization, pre-mRNA splicing	H, R	[38]
Survivin and EPR-1	Colon cancer	Not known	H	[39]
α-globulin and LUC7L	α-Thalassaemia	Methylation	H	[40]
IGF2R and Air	Tumour suppressor	Imprinting	H, M	[41,42]
KvLQT1	Beckwith-Wiedemann syndrome	Imprinting	H	[43]
SNURF-SNRPN and UBE3A	Prader-Willi and Angelman syndrome	Imprinting	H	[44]
GNAS	Signal transduction	Imprinting	H, M	[45]
BCMA and BCMA-AS RNA	B-cell maturation	Translation block, editing	H	[46,47]
Bcl-2 and IgH	Follicular B-cell lymphoma	RNA stabilization	H	[48]
c-erbA and Rev-ErbAα	Thyroid hormone receptor	Splicing	H, R	[49-51]
Thymidylate synthase and rTSα	DNA replication and repair	Editing	H	[52]
CHRNA3 and CHRNA5	Neuronal nicotinic receptor	Stabilization	H, B	[53]
Myelin basic protein (MBP and MBP-AS)	Myelin formation	Transport	M	[54]
eNOS and NOS3AS (sONE)	Vascular disease	Inverse S–AS correlation	H, M	[55]
Neuronal nitric oxide synthase and NOS	Nervous system signalling	Post-transcriptional, translation	S, H, R	[56]
Inducible nitric oxide synthase (iNOS and iNOS AS)	Inflammatory diseases	Stability	R	[57]
NOS2A and anti-NOS2A	Neuronal differentiation	Inverse S–AS correlation	P	[58]
SMAD5 and DAMS	TGF-β/BMP inhibitory signals	Transcriptional interference, translational block	H, R	[59]
eIF2α	T cell mitogenesis	RNA degradation	H	[60]
ERCC-1, RAF49 (ASE-1)	DNA repair	Stability, localization	H	[61]
α1 collagen	Chondrogenesis	Competitive transcriptional interference	Ch	[62]
MKRN2 and RAF1	Cancer	Polyadenylation	Mm	[63]
Hoxa 11	Development	Epigenetic	Mm	[64]
Cardiac troponin 1	Myocardial function	Translation	H, R	[65]
pMCH and pMCH antisense	Food intake	Splicing	H, R	[66,67]
CDYL and CDYL-AS	Spermatogenesis	Not known	B	[68]

FGFR-3 and psiFGFR-3	Bone and haematopoietic maturation	RNA degradation, translation inhibition	M	[69]
TOP1 and TOP1-AS	Cell cycle	Translational regulation	H	[70]
EP1 prostanoid receptor and PKN protein kinase	Intracellular signalling	Not known	M	[71]
EMX2 and EMX2OS	Development	Splicing, polyadenylation	H, M	[72]
Thymidine kinase and TK-AS	Cell cycle	Inverse S–AS correlation	M	[73]
DIPLA1 and DIPAS	Placenta specific	Not known	H	[74]
GnRH and SH	Gonadotropin-releasing hormone (GnRH)	Not known	R	[75]
HLA-J cluster HZFw and HZFc HZFw and HCGV HTEX6 and HTEX4	MHC class I	Alternative splicing, alternative polyadenylation	H, M	[76]
MHC IIa, IIx, IIb and antisense aII, xII, bII	Skeletal muscle myosin heavy chain regulation	Transcriptional interference and/or promoter methylation	R	[77]
Cardiac αMHC and AS-αMHC	Cardiac myosin heavy chain α–β gene switching	Transcriptional regulation at promoter	H, R	[78]
ABO and ABOAS	Blood group, ABO gene expression	Post-transcriptional, methylation	H	[79]
Frequency, *frq* and antisense-*frq*	Circadian clock function	Inverse S–AS correlation	F	[80]
ORCTL2 and ORCTL2S	Wilm's tumour	Imprinting	H	[81]
Tenascin-X and P450c21B	Adrenal function	Post-transcriptional	H	[82]
NPT and NPT-AS	Na/Pi co-transporter, Phosphate homeostasis	Translation interference	M, Z	[83]
PKN and EP1	Protein kinase	Alternative polyadenylation	M	[71]
COX10 and C17ORF1	Charcot-Marie-Tooth	Post-transcriptional	H	[84]
c-myc and c-myc-antisense	Oncogene	Pre-mRNA processing, transcription interference	R, H	[85,86]

Species: B, bovine; C, canine; Ch, chicken; F, fungus; H, human; M, mice; Mm, mammals; P, primate; R, rat or rodent; S, snail; Z, zebrafish.

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