

**Table S1.** Roles and targets of IGF2BP3 in various human cancers.

Tumor type	Target	Validated m6A modification	Function	References
Leukemia	RCC2	√	Inhibits the apoptosis	[28]
	COX-2		Inhibits the apoptosis	[29]
Glioma	ZNRF3		Promotes the proliferation and TMZ resistance and inhibits apoptosis	[39]
	LncRNA WEE2-AS1	√	Promotes the proliferation, invasion and dasatinib resistance	[42]
Ewing sarcoma	ABCF1		Promotes the growth and migration	[50]
	CD164		Promotes the migration	[51]
	IGF1R		Promotes the migration and growth.	[52]
Hepatocellular carcinoma	TRAF5		Promotes the proliferation and metastasis	[55]
	Lnc-CTHCC	√	Promotes the proliferation, invasion and angiogenesis	[56]
	NRF2	√	Inhibits the ferroptosis and promotes sorafenib resistance	[62]
Gastric cancer	PKMYT1	√	Promotes the invasion and migration	[68]
	HDGF	√	Promotes the growth, metastasis and angiogenesis	[69]
	SLC7A5		Promotes the proliferation	[70]
	MYC		Promotes the proliferation and migration	[71]
	CD44		Promotes the migration, invasion and EMT	[72]
Colorectal cancer	CCND1	√	Promotes the proliferation and regulates cell cycle	[78]
	VEGF	√	Promotes angiogenesis	[78]
	MEKK1		Promotes the proliferation, migration, and invasion	[79]
	CCND2		Promotes the proliferation and regulates cell cycle	[80]
	MAP2K1		Promotes the proliferation	[81]
	TPR		Promotes the proliferation	[81]
Oral cancer	GLUT1	√	Promotes aerobic glycolysis	[91]
	PDPN		Promotes the growth and invasion	[92]
Esophageal cancer	HTR3A		Promotes the proliferation and migration	[97]
	KIF18A		Promotes the proliferation, migration, invasion and radiosensitivity	[98]
Lung cancer	GPX4	√	Inhibits the ferroptosis	[103]
	SLC3A2	√	Inhibits the ferroptosis	[103]
	ACSL3	√	Inhibits the ferroptosis	[103]
	FTH1	√	Inhibits the ferroptosis	[103]
	TMBIM6	√	Promotes the proliferation, migration, invasion and inhibits apoptosis	[104]
	FOXM1		Promotes the proliferation, migration and EMT	[105]
	MYC		Inhibits the apoptosis	[106]
	HMGA2		Inhibits the apoptosis	[106]
	EIF4E-BP2		Promotes the proliferation	[107]
	TWIST1	√	Promotes the proliferation, migration and invasion	[108]

Nasopharyngeal carcinoma	KPNA2	√	Promotes the proliferation, invasion, migration and EMT	[114]
	LncRNA TINCR		Promotes the proliferation, metastasis, and cisplatin resistances	[117]
Breast cancer	SLUG		Promotes self-renewal and tumor initiation	[118]
	MMP9		Promotes the migration and invasion	[119]
	CD164		Promotes the migration and invasion	[119]
	MiR145-5p		Activates Hippo signaling	[120]
	TRIM25		Promotes the proliferation and regulates cell cycle	[121]
	CERS6		Promotes the proliferation and inhibits apoptosis	[122]
	PR		Promotes the migration and invasion	[124]
	ABCG2		Promotes doxorubicin and mitoxantrone resistance	[129]
	CD44		Promotes the proliferation and paclitaxel resistance	[130]
	PD-L1	√	Promotes immune escape	[133]
Cervical cancer	RAB2B		Promotes the proliferation	[136]
	ACIN1	√	Promotes the proliferation and migration	[138]
	KCNMB2-AS1	√	Promotes the proliferation and inhibits the apoptosis	[139]
	HK2		Promotes the aerobic glycolysis	[140]
	PDK4	√	Promotes the proliferation, glycolysis, and doxorubicin resistance	[141]
Ovarian cancer	SIX4		Promotes the proliferation, migration and invasion, and tube formation	[143]
	hCTR1		Promotes the proliferation, migration and invasion and platinum resistance	[145]
Endometrial cancer	E2F3		Promotes the proliferation, migration, and invasion	[149]
Prostate cancer	HDAC4	√	Promotes EMT and metastasis	[151]
Kidney cancer	CDK4	√	Promotes the proliferation	[153]
	FN1	√	Promotes the invasion and metastasis	[153]
	COL6A1	√	NA	[153]
	LAMA5	√	NA	[153]
	CDKN2B-AS1		Promotes the growth and metastasis	[154]
Bladder cancer	BIRC5	√	Promotes the proliferation and metastasis	[158]
	PD-L1		NA	[159]

**Table S2.** Full names of the genes mentioned in the text

Abbreviation	Full name
<i>IGF2BP3</i>	insulin-like growth factor 2 mRNA-binding protein 3
<i>TRAF5</i>	tumor necrosis factor receptor-associated factor 5
<i>EIF4E-BP2</i>	eukaryotic translation initiation factor 4E binding protein 2
<i>RCC2</i>	regulator of chromosome condensation 2
<i>IL-18</i>	interleukin 18
<i>HuR</i>	human antigen R
<i>COX-2</i>	cyclooxygenase 2
<i>ZNRF3</i>	zinc and ring finger 3
<i>ABCF1</i>	ATP binding cassette subfamily F member 1
<i>CXCR4</i>	C-X-C motif chemokine receptor 4

<i>NRF2</i>	NFE2 like BZIP transcription factor 2
<i>YBX1</i>	Y-box binding protein 1
<i>ZC3H13</i>	zinc finger CCCH-type containing 13
<i>YTHDF1</i>	YTH N6-methyladenosine RNA binding protein F1
<i>TRMT10C</i>	tRNA methyltransferase 10C, mitochondrial RNase P subunit
<i>YTHDF2</i>	YTH N6-methyladenosine RNA binding protein F2
<i>RRP8</i>	ribosomal RNA processing 8
<i>TRMT6</i>	tRNA methyltransferase 6 non-catalytic subunit
<i>LRPPRC</i>	leucine rich pentatricopeptide repeat containing
<i>G6PD</i>	glucose-6-phosphate dehydrogenase
<i>ZNF239</i>	zinc finger protein 239
<i>BIRC5</i>	baculoviral IAP repeat containing 5
<i>FOXM1</i>	forkhead box M1
<i>CENPA</i>	centromere protein A
<i>KIF4A</i>	kinesin family member 4A
<i>DTYMK</i>	deoxythymidylate kinase
<i>PRC1</i>	protein regulator of cytokinesis 1
<i>KIF2C</i>	kinesin family member 2C
<i>TRIP13</i>	thyroid hormone receptor interactor 13
<i>THYM</i>	thymoma
<i>TPX2</i>	TPX2 microtubule nucleation factor
<i>PKMYT1</i>	protein kinase, membrane associated tyrosine/threonine 1
<i>HDGF</i>	heparin binding growth factor
<i>SLC7A5</i>	solute carrier family 7 member 5
<i>MYC</i>	MYC proto-oncogene, bHLH transcription factor
<i>ZEB1</i>	zinc finger E-box binding homeobox 1
<i>SNAIL1</i>	snail family transcriptional repressor 1
<i>CCND1</i>	cyclin D1
<i>VEGF</i>	vascular endothelial growth factor
<i>MEKK1</i>	mitogen-activated protein kinase kinase kinase 1
<i>CCND2</i>	cyclin D2
<i>ELAVL1</i>	ELAV like RNA binding protein 1
<i>KRAS</i>	KRAS proto-oncogene, GTPase
<i>MAP2K1</i>	mitogen-activated protein kinase kinase 1
<i>TPR</i>	translocated promoter region, nuclear basket protein
<i>CCNH</i>	cyclin H
<i>LARP1</i>	La ribonucleoprotein 1, translational regulator
<i>YBX1</i>	Y-box binding protein 1
<i>PABPC1L</i>	poly(A) binding protein cytoplasmic 1 like
<i>PPARGC1A</i>	PPARG coactivator 1 alpha
<i>PTRH1</i>	peptidyl-tRNA hydrolase 1 homolog
<i>TDRD7</i>	tudor domain containing 7
<i>NOX4</i>	NADPH oxidase 4
<i>DACT3</i>	dishevelled binding antagonist of beta catenin 3

<i>EEF1A2</i>	eukaryotic translation elongation factor 1 alpha 2
<i>BMP5</i>	bone morphogenetic protein 5
<i>GCNT2</i>	glucosaminyl (N-acetyl) transferase 2 (I blood group)
<i>SFRP1</i>	secreted frizzled related protein 1
<i>GLUT1</i>	glucose transporter 1
<i>PDPN</i>	podoplanin
<i>HTR3A</i>	5-hydroxytryptamine receptor 3A
<i>KIF18A</i>	kinesin family member 18A
<i>LY6K</i>	lymphocyte antigen 6 family member K
<i>TTK</i>	TTK protein kinase
<i>HNRNPC</i>	heterogeneous nuclear ribonucleoprotein C
<i>RBM15</i>	RNA binding motif protein 15
<i>METTL16</i>	methyltransferase 16, N6-methyladenosine
<i>KIAA1429</i>	vir like m6A methyltransferase associated
<i>GPX4</i>	glutathione peroxidase 4
<i>SLC3A2</i>	solute carrier family 3 member 2
<i>ACSL3</i>	acyl-CoA synthetase long chain family member 3
<i>FTH1</i>	ferritin heavy chain 1
<i>STRIP2</i>	striatin interacting protein 2
<i>TMBIM6</i>	transmembrane BAX inhibitor motif containing 6
<i>HMGA2</i>	high mobility group AT-hook 2
<i>TWIST1</i>	twist family bHLH transcription factor 1
<i>ZCCHC4</i>	zinc finger CCHC-type containing 4
<i>ALKBH5</i>	alkB homolog 5, RNA demethylase
<i>YTHDF3</i>	YTH N6-methyladenosine RNA binding protein F3
<i>METTL5</i>	methyltransferase 5, N6-adenosine
<i>G3BP1</i>	G3BP stress granule assembly factor 1
<i>RBMX</i>	RNA binding motif protein X-linked
<i>RBM15B</i>	RNA binding motif protein 15B
<i>ALDOA</i>	aldolase, fructose-bisphosphate A
<i>CASP12</i>	caspase 12
<i>CASP14</i>	caspase 14
<i>EXO1</i>	exonuclease 1
<i>FAT1</i>	FAT atypical cadherin 1
<i>FEN1</i>	flap structure-specific endonuclease 1
<i>GDF15</i>	growth differentiation factor 15
<i>HOXB7</i>	homeobox B7
<i>KRT18</i>	keratin 18
<i>MAL</i>	mal, T cell differentiation protein
<i>MSX1</i>	msh homeobox 1
<i>NT5E</i>	5'-nucleotidase ecto
<i>NTSR1</i>	neurotensin receptor 1
<i>SIX1</i>	SIX homeobox 1
<i>TXNRD1</i>	thioredoxin reductase 1

<i>UBE2S</i>	ubiquitin conjugating enzyme E2 S
<i>WFDC2</i>	WAP four-disulfide core domain 2
<i>KPNA2</i>	karyopherin subunit alpha 2
<i>ACLY</i>	ATP citrate lyase
<i>PADI1</i>	peptidyl arginine deiminase 1
<i>MMP2</i>	matrix metalloproteinase 2
<i>MMP9</i>	matrix metalloproteinase 9
<i>SLUG</i>	snail family transcriptional repressor 2
<i>WNT5B</i>	Wnt family member 5B
<i>TRIM25</i>	tripartite motif containing 25
<i>CERS6</i>	ceramide synthase 6
<i>PR</i>	progesterone receptor
<i>ABCG2</i>	ATP binding cassette subfamily G member 2
<i>IGF2</i>	insulin like growth factor 2
<i>PD-L1</i>	programmed cell death 1 ligand 1
<i>RAB2B</i>	RAB2B, member RAS oncogene family
<i>ACIN1</i>	apoptotic chromatin condensation inducer 1
<i>HK2</i>	hexokinase 2
<i>PDK4</i>	pyruvate dehydrogenase kinase 4
<i>SIX4</i>	SIX homeobox 4
<i>L1CAM</i>	L1 cell adhesion molecule
<i>E2F3</i>	E2F transcription factor 3
<i>HDAC4</i>	histone deacetylase 4
<i>ARHGAP5</i>	Rho GTPase activating protein 5
<i>CDK4</i>	cyclin dependent kinase 4
<i>COL6A1</i>	collagen type VI alpha 1 chain
<i>LAMA5</i>	laminin subunit alpha 5
<i>FN1</i>	fibronectin 1
<i>NUF2</i>	NUF2 component of NDC80 kinetochore complex
<i>METTL3</i>	methyltransferase 3, N6-adenosine-methyltransferase complex catalytic subunit
<i>HIF1A</i>	hypoxia inducible factor 1 subunit alpha
<i>BIRC5</i>	baculoviral IAP repeat containing 5
<i>LRPPRC</i>	leucine rich pentatricopeptide repeat containing
<i>YTHDC1</i>	YTH N6-methyladenosine RNA binding protein C1
<i>WTAP</i>	WT1 associated protein
<i>IGF1R</i>	insulin like growth factor 1 receptor

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