

Current list of HBD fusion proteins

Protein X ^a	HBD ^b	regulated as ^c	Refs.
Transcription factors			
APETALA3	GR	transcription factor in Arabidopsis	1
ATF6 α	ER ^e	transcription factor	2
Athb-1	GR	Arabidopsis transcription factor in tobacco	3
Bob1/OBF1	ER ^e	coactivator	4
CCAT (from calcium channel cav1.2)	ER ^e	transcription factor	5
C/EBP	ER, GR	transcription factor	6
C/EBP β (=NF-M)	ER	transcription factor, differentiation factor	7
CLOCK	GR	transcription factor	8
CONSTANS	GR	putative transcription factor in arabidopsis	9
E1A	GR	transcription factor	10
E1A	ER	oncoprotein	11
E2F-1, -2, -3	ER	transcription factor	12
E2A	ER ^e	transcription factor	13
E7 (of HPV16)	ER	oncoprotein	9
EBNA2	ER ^e	oncoprotein	14
EBNA3C	ER ^e	oncoprotein	15
Erm (Ets family)	ER	transcription factor	16
c-Fos, v-Fos, FosB-L, FosB-S	ER, GR	oncoprotein, transcription factor	17,18
FOXO3a	ER	transcription factor	19
Gal4	ER, GR, MR, PR	transcription factor in yeast and tissue culture cells	20, i
Gal4-KRAB	PR ^e	transcriptional repressor	21
Gal4-p65 ^d	PR ^e	transcription factor	22
Gal4-VP16	ER, GR, PR ^e	transcription factor in yeast, in tissue culture cells, transgenic mice, Xenopus, Drosophila and plants	21,23-29
GATA-1, -2, -3	ER	transcription factor, promoter of proliferation	30
Gcn4	ER, MR	transcription factor	31
Gli	ER	transcription factor	32

IRF-1	ER	transcription factor	33
c-Jun	ER	transcription factor	34
JunD	ER	transcription factor	35
v-Jun (DBD ^f)	ER	as DNA binding factor	36
Klf1	ER <i>e</i>	transcription factor	37
LexA-p65 ^d	PR <i>e</i>	transcription factor in fish	38
LexA-VP16	ER	transcription factor in yeast and plants	i, 39
MT-MC1	ER <i>e</i>	transcription factor	40
v-Myb	ER	transcription factor	41
c-Myc	ER, GR	oncogene	42
MyoD	ER, TR, GR	transcription factor in tissue culture and frog embryos	43,44
Notch (ic)	ER	transcription factor	45
p53	ER	regulator of proliferation	46,47
Pax3-FKHR	ER <i>e</i>	transcription factor	48
Pax-5	ER	transcription factor	49
PU.1	ER	transcription factor	50
R (of maize)	GR	transcription factor in Arabidopsis	51
v-Rel, c-Rel	ER	oncogene, transcription factor	52,53
RUNX1	ER <i>e</i>	transcription factor	54
Snail	ER <i>e</i>	transcription factor	55
Stat1, Stat5A, Stat5B	ER	transcription factor	56
Stat6	ER <i>e</i>	transcription factor	56,57
TLS-CHOP	ER	oncogene	58
Twist	ER <i>e</i>	transcription factor	55
Xbra	GR	transcription factor in frog embryos	59
Zinc finger TFs	ER <i>e</i> , PR	artificial transcription factors	60
Zta	ER <i>e</i>	activator of EBV replication	61
Kinases			
Abl	ER, GR	oncogene, tyrosine kinase	62
Akt (=PKB)	ER <i>e</i>	serine / threonine kinase	63
erbB1	ER	tyrosine kinase	g
MEK1	ER <i>e</i>	oncogene, dual kinase	64
MEKK3	ER	activation of SAPK pathway	65
Raf-1	ER, AR	oncogene, serine / threonine kinase	66,67
A-Raf, B-Raf	ER	oncogenes	68
Ste11	ER, MR, PR	serine / threonine kinase in yeast	69 and i
Src	ER	tyrosine kinase	g; see also ref. 70

Recombinases & nucleases			
Cre <i>J</i>	ER ^e , PR ^e , GR ^e , AR ^e	recombinase in tissue culture cells, transgenic mice and yeast	71-79
Flp	ER, GR, AR	recombinase in tissue culture cells and yeast	80,81
<i>piggyBac</i> transposase	ER ^e	in tissue culture cells	82
I-Ppol	ER ^e	homing endonuclease	83
Miscellaneous			
BLNK	ER ^e	adaptor protein	84
β-catenin	ER ^e	signaling molecule	85
Cdc13	ER	cyclin (in <i>S. pombe</i>)	86
Fas	ER, RAR	apoptosis	87
β-galactosidase	ER, PR	α-complementation in yeast	88
G _{αq}	ER ^e	G protein	89
Intein fusion	ER ^e	protein splicing	90,91
Psf2	ER	DNA replication (in <i>S. pombe</i>)	86
Ras	ER	in yeast	92
Rep (of AAV)	ER, PR ^e	replication, integration	h, 93
Rev (of HIV)	GR	transactivation (RNA-binding protein)	94
Rex (of HTLV-1)	ER	Rex functions, localization	95
Telomerase	ER ^e	Telomerase function	96
Thymidylate synthase	ER ^e	Enzyme activity and growth in <i>E. coli</i>	97

Footnotes

^a Proteins were alphabetically grouped into different classes.

^b HBDs were from the following receptors: AR, ER, GR, MR, PR, RAR, and TR, androgen, estrogen, glucocorticoid, mineralocorticoid, progesterone, retinoic acid, and thyroid receptors, respectively.

^c Unless indicated assays were done in vertebrate tissue culture cells.

^d contains activation domain of the NFκB component p65.

^e Mutant HBDs that only (or also) respond to antihormones were used in some experiments.

^f DBD, DNA binding domain.

^g J. M. Bishop, personal communication.

^h A. Salvetti, personal communication.

ⁱ Picard lab, unpublished results.

J High level expression, at least in some tissues or cells, can lead to significant constitutive activity (^{98,99}).

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Review:

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