

EpiTect® ChIP qPCR Array

Mouse DNA Repair

Cat. NO. 334211 GM-042A

For chromatin immunoprecipitation analysis

Format	For use with the following real-time cyclers
EpiTect ChIP qPCR Array Format A	Applied Biosystems® models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well block); Bio-Rad® models iCycler®, iQ™ 5, MyiQ™, MyiQ2; Bio-Rad/MJ Research Chromo4™; Eppendorf® MasterCycler® ep realplex models 2, 2s, 4, 4s; Stratagene® models Mx3005P®, Mx3000P®; Takara: TP-800
EpiTect ChIP qPCR Array Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
EpiTect ChIP qPCR Array Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
EpiTect ChIP qPCR Array Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
EpiTect ChIP qPCR Array Format F	Roche® LightCycler® 480 (96-well block)
EpiTect ChIP qPCR Array Format G	Roche: LightCycler 480 (384-well block)



Description

The Mouse DNA Repair EpiTect ChIP qPCR Array profiles the histone modification status or “histone code” of 84 key genes encoding the enzymes that repair damaged DNA. Histone modifications regulate chromatin structure, genome integrity, chromosome stabilization, DNA repair and transcriptional activity. Daily exposure to environmental agents (such as reactive oxygen species, methylating agents, UV light and other ionizing radiation) and even normal physiological processes (like replication and recombination) all damage DNA. Cells must repair DNA damage to prevent mutations from accumulating and to maintain genome integrity and stability. Inherited and acquired defects in DNA repair lead to accelerated aging and increased predisposition to cancer. Epigenetic dysregulation, also often occurring in cancer, affects DNA repair by altering the expression levels of relevant genes. For example, the BRCA1 promoter carries the H3K4me3 histone mark consistent with its active transcription in normal breast tissues. However, the BRCA1 promoter in breast cancers exhibits transcriptional repression, due to loss of H3K4me3 and gain of H3K9me2 histone marks. This array represents genes involved in the base-excision, nucleotide excision, mismatch, double-strand break, and other repair processes. Using chromatin immunoprecipitation and this qPCR Array, you can easily and reliably analyze the histone modification patterns associated with a focused gene panel involved in DNA Repair.

For further details, consult the *EpiTect ChIP qPCR Array Handbook*.

Shipping and storage

EpiTect ChIP qPCR Arrays are shipped at room temperature (15–25°C), on dry ice, or on blue ice depending on the destination and accompanying products. They should be stored at –20°C. Ensure that you have the correct EpiTect ChIP qPCR Array format for your instrument before starting the experiment.

Note: Open the package and store the products appropriately immediately on receipt.

Array layout

	1	2	3	4	5	6	7	8	9	10	11	12
A	Apex1	Apex2	Atm	Atxn3	Brca1	Brca2	Brip1	Ccnh	Ccnu	Cdk7	Ddb1	Ddb2
B	Dmc1	Ercc1	Ercc2	Ercc3	Ercc4	Ercc5	Ercc6	Ercc8	Exo1	Fen1	Lig1	Lig3
C	Lig4	Mgmt	Mlh1	Mlh3	Mms19l	Mpg	Mre11a	Msh2	Msh3	Msh4	Msh5	Msh6
D	Mutyh	Neil1	Neil2	Neil3	Nthl1	Ogg1	Parp1	Parp2	Parp3	Pms1	Pms2	Pnkp
E	Polb	Pold3	Poll	Prkdc	Rad18	Rad21	Rad23a	Rad23b	Rad50	Rad51	Rad51c	Rad51ll
F	Rad51l3	Rad52	Rad54l	Rfc1	Rpa1	Rpa3	Slk	Smug1	Tdg	Top3a	Top3b	Trex1
G	Trex2	Ung	Xab2	Xpa	Xpc	Xrcc1	Xrcc2	Xrcc3	Xrcc4	Xrcc5	Xrcc6	Xrcc6bp1
H	Gapdh	Gapdh	Gapdh	Actb	Rpl30	Myod1	Serpina1a	IAP	Minor_sat	IGX1A	PPC	PPC

Gene table

Position	UniGene	GenBank	Gene Symbol	Description	Primer Catalog No.
A01	Mm.203	NM_009687	Apex1	Apurinic/apyrimidinic endonuclease 1	GPM1031515(+)01A
A02	Mm.440275	NM_029943	Apex2	Apurinic/apyrimidinic endonuclease 2	GPM1055876(+)01A
A03	Mm.5088	NM_007499	Atm	Ataxia telangiectasia mutated homolog (human)	GPM1054827(+)01A
A04	Mm.485508	NM_029705	Atxn3	Ataxin 3	GPM1044659(+)01A
A05	Mm.244975	NM_009764	Brca1	Breast cancer 1	GPM1044092(+)01A
A06	Mm.236256	NM_009765	Brca2	Breast cancer 2	GPM1037690(+)01A
A07	Mm.186143	NM_178309	Brip1	BRCA1 interacting protein C-terminal helicase 1	GPM1043879(+)01A
A08	Mm.18474	NM_023243	Ccnh	Cyclin H	GPM1031050(+)01A
A09			Ccnu		GPM1031141(+)01A
A10	Mm.259718	NM_009874	Cdk7	Cyclin-dependent kinase 7	GPM1045273(+)01A
A11	Mm.289915	NM_015735	Ddb1	Damage specific DNA binding protein 1	GPM1033941(+)01A
A12	Mm.389334	NM_028119	Ddb2	Damage specific DNA binding protein 2	GPM1048939(+)01A
B01	Mm.2524	NM_010059	Dmc1	DMC1 dosage suppressor of mck1 homolog, meiosis-specific homologous recombination (yeast)	GPM1046294(+)01A
B02	Mm.280913	NM_007948	Ercc1	Excision repair cross-complementing rodent repair deficiency, complementation group 1	GPM1038650(+)01A
B03	Mm.36524	NM_007949	Ercc2	Excision repair cross-complementing rodent repair deficiency, complementation group 2	GPM1038652(+)01A
B04	Mm.282335	NM_133658	Ercc3	Excision repair cross-complementing rodent repair deficiency, complementation group 3	GPM1033513(+)01A
B05	Mm.287837	NM_015769	Ercc4	Excision repair cross-complementing rodent repair deficiency, complementation group 4	GPM1032358(+)01A
B06	Mm.2213	NM_011729	Ercc5	Excision repair cross-complementing rodent repair deficiency, complementation group 5	GPM1027887(+)01A
B07	Mm.318310	NM_001081221	Ercc6	Excision repair cross-complementing rodent repair deficiency, complementation group 6	GPM1031388(+)01A
B08	Mm.212208	NM_028042	Ercc8	Excision repair cross-complementing rodent repair deficiency, complementation group 8	GPM1031124(+)01A
B09	Mm.283046	NM_012012	Exo1	Exonuclease 1	GPM1028459(+)01A
B10	Mm.2952	NM_007999	Fen1	Flap structure specific endonuclease 1	GPM1048080(+)01A
B11	Mm.288179	NM_010715	Lig1	Ligase I, DNA, ATP-dependent	GPM1038562(+)01A
B12	Mm.277136	NM_010716	Lig3	Ligase III, DNA, ATP-dependent	GPM1029748(+)01A
C01	Mm.80584	NM_176953	Lig4	Ligase IV, DNA, ATP-dependent	GPM1053958(+)01A
C02	Mm.440219	NM_008598	Mgmt	O-6-methylguanine-DNA methyltransferase	GPM1039559(+)01A
C03	Mm.196006	NM_026810	Mlh1	MutL homolog 1 (E. coli)	GPM1055175(+)01A
C04	Mm.311981	NM_175337	Mlh3	MutL homolog 3 (E coli)	GPM1044588(+)01A
C05			Mms19l		GPM1048284(+)01A
C06	Mm.263161	NM_010822	Mpg	N-methylpurine-DNA glycosylase	GPM1029320(+)01A
C07	Mm.149071	NM_018736	Mre11a	Meiotic recombination 11 homolog A (S. cerevisiae)	GPM1040405(+)01A
C08	Mm.4619	NM_008628	Msh2	MutS homolog 2 (E. coli)	GPM1033391(+)01A
C09	Mm.343101	NM_010829	Msh3	MutS homolog 3 (E. coli)	GPM1045215(+)01A
C10	Mm.272226	NM_031870	Msh4	MutS homolog 4 (E. coli)	GPM1050173(+)01A
C11	Mm.24192	NM_013600	Msh5	MutS homolog 5 (E. coli)	GPM1047299(+)01A
C12	Mm.18210	NM_010830	Msh6	MutS homolog 6 (E. coli)	GPM1033393(+)01A
D01	Mm.180333	NM_133250	Mutyh	MutY homolog (E. coli)	GPM1036479(+)01A
D02	Mm.35749	NM_028347	Neil1	Nei endonuclease VIII-like 1 (E. coli)	GPM1054859(+)01A
D03	Mm.239490	NM_201610	Neil2	Nei like 2 (E. coli)	GPM1045818(+)01A
D04	Mm.281749	NM_146208	Neil3	Nei like 3 (E. coli)	GPM1054133(+)01A
D05	Mm.148315	NM_008743	Nthl1	Nth (endonuclease III)-like 1 (E.coli)	GPM1032916(+)01A
D06	Mm.43612	NM_010957	Ogg1	8-oxoguanine DNA-glycosylase 1	GPM1038173(+)01A

Position	UniGene	GenBank	Gene Symbol	Description	Primer Catalog No.
D07	Mm.277779	NM_007415	Parp1	Poly (ADP-ribose) polymerase family, member 1	GPM1028483(+)01A
D08	Mm.281482	NM_009632	Parp2	Poly (ADP-ribose) polymerase family, member 2	GPM1031514(+)01A
D09	Mm.273659	NM_145619	Parp3	Poly (ADP-ribose) polymerase family, member 3	GPM1055104(+)01A
D10	Mm.60499	NM_153556	Pms1	Postmeiotic segregation increased 1 (S. cerevisiae)	GPM1042084(+)01A
D11	Mm.2950	NM_008886	Pms2	Postmeiotic segregation increased 2 (S. cerevisiae)	GPM1037638(+)01A
D12	Mm.238254	NM_021549	Pnkp	Polynucleotide kinase 3'-phosphatase	GPM1038993(+)01A
E01	Mm.123211	NM_011130	Polb	Polymerase (DNA directed), beta	GPM1054023(+)01A
E02	Mm.37562	NM_133692	Pold3	Polymerase (DNA-directed), delta 3, accessory subunit	GPM1053444(+)01A
E03	Mm.46509	NM_020032	Poll	Polymerase (DNA directed), lambda	GPM1048316(+)01A
E04	Mm.71	NM_011159	Prkdc	Protein kinase, DNA activated, catalytic polypeptide	GPM1032375(+)01A
E05	Mm.103812	NM_021385	Rad18	RAD18 homolog (S. cerevisiae)	GPM1052265(+)01A
E06	Mm.182628	NM_009009	Rad21	RAD21 homolog (S. pombe)	GPM1046092(+)01A
E07	Mm.477498	NM_009010	Rad23a	RAD23a homolog (S. cerevisiae)	GPM1054296(+)01A
E08	Mm.196846	NM_009011	Rad23b	RAD23b homolog (S. cerevisiae)	GPM1036246(+)01A
E09	Mm.4888	NM_009012	Rad50	RAD50 homolog (S. cerevisiae)	GPM1043554(+)01A
E10	Mm.471596	NM_011234	Rad51	RAD51 homolog (S. cerevisiae)	GPM1034879(+)01A
E11	Mm.37376	NM_053269	Rad51c	Rad51 homolog c (S. cerevisiae)	GPM1043891(+)01A
E12	Mm.341756	NM_009014	Rad51l1	RAD51-like 1 (S. cerevisiae)	GPM1030396(+)01A
F01	Mm.9286	NM_011235	Rad51l3	RAD51-like 3 (S. cerevisiae)	GPM1043851(+)01A
F02	Mm.149	NM_011236	Rad52	RAD52 homolog (S. cerevisiae)	GPM1038220(+)01A
F03	Mm.3655	NM_009015	Rad54l	RAD54 like (S. cerevisiae)	GPM1050634(+)01A
F04	Mm.148877	NM_011258	Rfc1	Replication factor C (activator 1) 1	GPM1051257(+)01A
F05	Mm.180734	NM_026653	Rpa1	Replication protein A1	GPM1043788(+)01A
F06	Mm.29073	NM_026632	Rpa3	Replication protein A3	GPM1051846(+)01A
F07	Mm.281011	NM_009289	Slk	STE20-like kinase (yeast)	GPM1034184(+)01A
F08	Mm.254820	NM_027885	Smug1	Single-strand selective monofunctional uracil DNA glycosylase	GPM1046512(+)01A
F09	Mm.347607	NM_011561	Tdg	Thymine DNA glycosylase	GPM1028941(+)01A
F10	Mm.477819	NM_009410	Top3a	Topoisomerase (DNA) III alpha	GPM1043633(+)01A
F11	Mm.326089	NM_011624	Top3b	Topoisomerase (DNA) III beta	GPM1032381(+)01A
F12	Mm.439964	NM_011637	Trex1	Three prime repair exonuclease 1	GPM1055142(+)01A
G01	Mm.23312	NM_011907	Trex2	Three prime repair exonuclease 2	GPM1055574(+)01A
G02	Mm.1393	NM_011677	Ung	Uracil DNA glycosylase	GPM1037396(+)01A
G03	Mm.23739	NM_026156	Xab2	XPA binding protein 2	GPM1053931(+)01A
G04	Mm.247036	NM_011728	Xpa	Xeroderma pigmentosum, complementation group A	GPM1050365(+)01A
G05	Mm.2806	NM_009531	Xpc	Xeroderma pigmentosum, complementation group C	GPM1052223(+)01A
G06	Mm.4347	NM_009532	Xrcc1	X-ray repair complementing defective repair in Chinese hamster cells 1	GPM1038731(+)01A
G07	Mm.143767	NM_020570	Xrcc2	X-ray repair complementing defective repair in Chinese hamster cells 2	GPM1051127(+)01A
G08	Mm.19082	NM_028875	Xrcc3	X-ray repair complementing defective repair in Chinese hamster cells 3	GPM1044726(+)01A
G09	Mm.37531	NM_028012	Xrcc4	X-ray repair complementing defective repair in Chinese hamster cells 4	GPM1045206(+)01A
G10	Mm.246952	NM_009533	Xrcc5	X-ray repair complementing defective repair in Chinese hamster cells 5	GPM1027983(+)01A
G11	Mm.288809	NM_010247	Xrcc6	X-ray repair complementing defective repair in Chinese hamster cells 6	GPM1032138(+)01A
G12	Mm.276769	NM_026858	Xrcc6bp1	XRCC6 binding protein 1	GPM1043223(+)01A
H01	Mm.343110	NM_008084	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase	GPM1052368(-)03A
H02	Mm.343110	NM_008084	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase	GPM1052368(+)01A
H03	Mm.343110	NM_008084	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase	GPM1052368(+)04A
H04	Mm.328431	NM_007393	Actb	Actin, beta	GPM1051747(+)01A
H05	Mm.358632	NM_009083	Rpl30	Ribosomal protein L30	GPM1046052(+)01A
H06	Mm.1526	NM_010866	Myod1	Myogenic differentiation 1	GPM1039033(+)01A
H07	Mm.439692	NM_009243	Serpina1a	Serine (or cysteine) peptidase inhibitor, clade A, member 1a	GPM1044680(+)01A
H08			IAP		GPM100002C(+)01A
H09			Minor_sat		GPM100003C(+)01A
H10			IGX1A		GPM100001C(-)01A
H11			PPC		GPX1900002(-)01A
H12			PPC		GPX1900002(-)01A

EpiTect ChIP qPCR Array products are intended for molecular biology applications. These products are not intended for the diagnosis, prevention, or treatment of a disease.

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