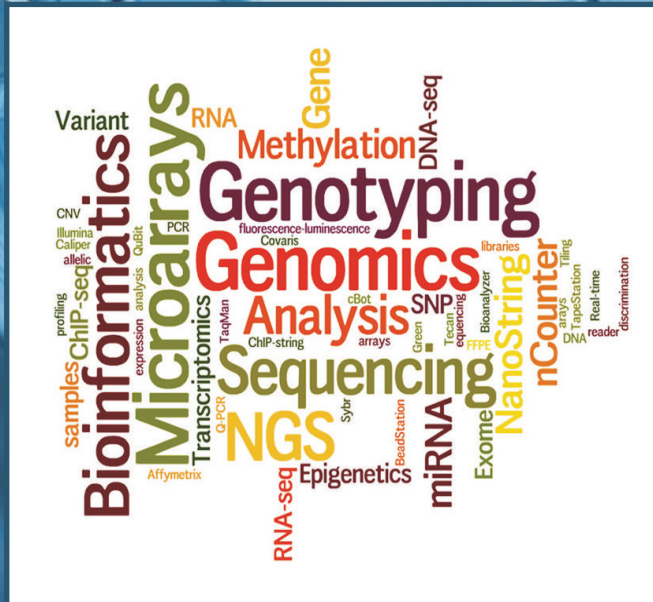


Products Price List 2014-15

Life Science Group



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INR PRICE LIST

2014-15



PRODUCTS

CUSTOM DNA

Custom DNA Synthesis (Desalted DNA Oligos)

Synthesis Scale	Length	Yield	Price (Rs) Tubes	Price (Rs) Plates	Plate Service	96 well Plate
25 nmole	15-60 bases	3 ODs	19.89/base	14/base	Loaded with 100% synthesis yield	free
100 nmole	10-90 bases	6 ODs	34/base	26/base	Loaded with fixed quantity	free
250 nmole	5-100 bases	15 ODs	68/base	55/base	Loaded with fixed quantity, remainder in plates	Inquire
1 μ mole	5-100 bases	45 ODs	125/base	99/base	Primer mix with remainder in plates	Inquire
5 μ mole	5-60 bases	225 ODs	610/base	Inquire	Primer mix with fixed quantity and replicate plates	Inquire
10 μ mole	5-60 bases	450 ODs	1182/base	Inquire		

Yields are listed for unmodified oligos and will vary with length.

Machine mixing of degenrate / mixed bases is free of cost. For hand mixing of mixed bases additional fees will be applicable. Please enquire for the hand mixing of the mixed bases.

Duplex Annealing Fee

Scale	Price (Rs.)
100 nmole Duplex	4140
250 nmole Duplex	4140
1 μ mole Duplex	6120
100 nmole RNA Duplex	4140
250 nmole RNA Duplex	4140
1 μ mole RNA Duplex	6120

IDT offers many analytical and preparative services for oligos including:

- All oligos QC tested by mass spectrometry
- Standard mixed-base sites
- Customized hand-mix sites

Visit www.idtdna.com for details.

A custom, proprietary LC-MS Electrospray method has been developed to provide accurate mass assessment up to 200 bases.

Purifications	Type of Purification				
Scale	PAGE	HPLC	IE HPLC	RNase-Free HPLC	Dual HPLC
100 nmole (Rs)	3000	2750	2750	5000	5800
250 nmole (Rs)	4650	4250	4250	8550	8900
1 μ mole (Rs)	7500	6800	6800	11750	13750
5 μ mole (Rs)	52050	17850	17850	25000	36750
10 μ mole (Rs)	75650	27000	27000	42850	55600

ULTRAmers™

Product	Purification	Guaranteed Yield	Price (Rs)
4-nmole Ultramer DNA Oligo	Standard Desalt	4 nmoles	68/base
20-nmole Ultramer DNA Oligo	Standard Desalt	20 nmoles	138/base
Page Ultramer DNA Oligo	PAGE Purification	Inquire	Inquire
4-nmole Ultramer Plate Oligo	Standard Desalt	4 nmoles/well	39/base
20-nmole Ultramer Plate Oligo	Standard Desalt	20 nmoles/well	78/base

PRODUCTS

CUSTOM DNA

Ultramers Modifications

Modifications	4 nmole Ultramer™ Oligo (Rs)	4 nmole Ultramer™ Plate Oligo (Rs)	PAGE Ultramer™ (Rs)	20 nmole Ultramer™ Oligo (Rs)
5' Phosphorylation	1800	900	2280	2280
5' Biotin	3600	1800	NA	4560
5' Amino Modifier C6	2160	1080	NA	2760
5' Amino Modifier C12	5040	2520	NA	6360
5' deoxyInosine	720	360	900	900
5' deoxyUridine	720	360	900	900

200 picomole Ultramer DNA Plate oligo

The 200 picomole Ultramer™ DNA Plate Oligo provides customers with a low-yield, high-quantity option for Ultramer oligos. The minimum order size is 288 with a length limit of 45-200 bases. The product can be delivered in 96 or 384 well plates only, and can be shipped dry or at 2-10 μ M IDTE, pH 7.5. This product will be particularly valuable for those doing gene assembly and target enrichment for Next Generation Sequencing

200 picomole Ultramer DNA Plate oligo

DNA bases (Length 45-200 bases)	24/- per base.
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200 picomole Ultramer DNA Plate oligo (Available modifications)

Modification	Price (Rs)
5' Amino Modifier C12	2940/-
5' Amino Modifier C12	2940/-
5' Amino Modifier C6	1260/-
5' Biotin	2100/-
5' deoxyInosine	420/-
5' deoxyUridine	420/-
5' Phosphorylation	1050/-
Int deoxyInosine	420/-
Int deoxyUridine	420/-

Sub-Nanomole Plate Oligos

Sub-nanomole plates require a minimum order of 288 oligos.

Product	Length	Pricing
500 picomole	15 - 60 Bases	14/- per base

PRODUCTS

CUSTOM GENES AND DUPLEXES

Genes

Product	Yield	Length	Price (Rs)
miniGENES	4 µg purified plasmid DNA	5 to 500 base pairs	21,000/gene
Custom Gene Synthesis	4 µg purified plasmid DNA	500-1500 base pairs	68/base pair
Custom Gene Synthesis	4 µg purified plasmid DNA	>1500 base pairs	Please Enquire

gBlocks™ Gene Fragments

gBlocks™ Gene Fragments are double-stranded DNA molecules of up to 2000 bp in length. gBlocks Gene Fragments are synthesized using the same industry-leading, high-fidelity synthesis chemistries developed by IDT for our Ultramer™ oligonucleotides, and are sequence verified prior to shipping. The high sequence fidelity and rapid delivery time make gBlocks Gene Fragments ideal for a range of synthetic biology applications, including the ability to easily assemble multiple gene fragments to reliably generate larger gene constructs.

Highly versatile - gBlocks Gene Fragments can be used to easily and reliably assemble almost any sequence up to 2 kb, and are compatible with most published cloning methods, including the Gibson Assembly™ method, blunt-end or cohesive-end cloning protocols.

Easy isothermal gene assembly - Four gBlocks Gene Fragments can be assembled in a single reaction into a 2 kb gene in less than 1 hour; a simple, 30 nt sequence overlap is required when designing the gene fragments.

Product Description	Yield	Prices (Rs.)
gBlock Gene Fragments 125-500 bp	200 ng	16,500
gBlock Gene Fragments 501-750 bp	200 ng	20,710
gBlock Gene Fragments 751-1000 bp	200 ng	24,510
gBlock Gene Fragments 1001-1250 bp	200 ng	34,010
gBlock Gene Fragments 1251-1500 bp	200 ng	40,850
gBlock Gene Fragments 1501-1750 bp	200 ng	47,310
gBlock Gene Fragments 1751-2000 bp	200 ng	54,150

Custom Gene Synthesis

IDT offers a confidential custom gene synthesis service. By ordering genes from IDT, researchers not only save money spent on reagents necessary for construction, cloning, and sequencing but can also save time by outsourcing the manufacturing of hard-to-clone gene sequences which often result in repeated failures. At IDT, all genes are constructed using Ultramers™, the highest fidelity next generation synthesis technology available. Genes arrive in a plasmid cloning vector and are ready for use in a variety of applications. Sequence information is always secure and confidential at IDT. Non-disclosure agreements are available through IDT's legal services upon request.

Sequence Verification

All Genes and miniGENES are sequence verified on both strands prior to shipping. Sequence information including chromatograms and a plasmid map, and a FASTA file are available to the customer.

Standard Cloning

All IDT genes are delivered in a vector ready to be transformed into E. coli. IDT has the ability to construct genes ranging in size from 50bases and larger. Our preferred vector is IDT's proprietary cloning vectors, listed in below table.

Vector Information	Size	Sequence
pUCIDT	2800	http://www.idtdna.com/pages/docs/syntheticbiology/pucidt.fas
pIDTSmart (Amp)	2056	http://www.idtdna.com/pages/docs/synthetic-biology/pidtsmart_amp.fas
pIDTSmart (Kan)	1962	http://www.idtdna.com/pages/docs/synthetic-biology/pidtsmart_kan.fas
pIDTBlue	2891	http://www.idtdna.com/pages/docs/synthetic-biology/pidtblue.fas

Handling, setting up and complexity fees as applicable shall be charged extra

All genes would be delivered in pIDT smart vector at no additional charge.

Also includes electronic files of the complete sequence of plasmid containing the cloned gene, and DNA sequencing electropherograms.

PRODUCTS

DNA MODIFICATIONS

Phosphorylation	Price (Rs)					
Synthesis Scale	25 nmole	100 nmole	250 nmole	1 umole	5 umole	10 umole
5' Phosphorylation	2100	2100	2660	4760	9520	18900
3' Phosphorylation		2660	3220	5320	26600	26600
Attachment Chemistry & Linkers						
OTHERS						
5' Acrydite 1.0		8400	10500	16100	31500	63000
5' Adenylation		73080	98000	168000	455000	651000
3' Cholesteryl-TEG		8400	8400	25200	67200	126000
5' Digoxigenin NHS Ester		12180	12180	18900		
3' Digoxigenin NHS Ester		12180	12180	18900		
5' I-Linker 1.2		5880	7980	12180	30800	60900
5' Azide (NHS Ester)		9450	11340	17010	58590	115920
Int Azide (NHS Ester)		13230	17010	25200	88200	175770
3' Azide (NHS Ester)		9450	11340	17010	58590	115920
AMINO MODIFIERS						
5' Amino Modifier C6	2520	2520	3220	5320	10500	21000
5' Amino Modifier C12	5880	5880	7420	11060	22400	44100
5' Amino Modifier C6dT		13160	16100	23800	47600	94500
Int Amino Modifier C6dT		13160	16100	23800	47600	94500
3' Amino Modifier C6dT		21000	21000	31500	63000	126000
3' Amino Modifier		2520	3240	4560	11280	22800
5' Uni-Link™ Amino Modifier		7182	9072	13860	27720	53550
Int Uni-Link™ Amino Modifier		7182	9072	13860	27720	53550
BIOTINYLATION						
5'Biotin	3600	3600	4750	9000	18000	36000
3'Biotin		5400	6840	10440	26400	52200
5'Biotin dT		16200	16200	25200	62400	124200
Int Biotin dT		16200	16200	25200	62400	124200
3' Biotin dT		16200	16200	25200	62400	124200
5'Biotin -TEG		6480	8160	10800	27600	54000
3'Biotin -TEG		5400	6840	9000	22800	45000
5' Dual Biotin		18000	18000	27000	40800	84500
5' PC Biotin		13200	13200	29400	72800	124200
5' Biotin (Azide)		11340	14490	21420	74970	149310
Int Biotin (Azide)		13230	17010	25200	88200	175770
5' Desthiobiotin-TEG		10836	13860	20160	51030	100800
Int Desthiobiotin-TEG		10836	13860	20160	51030	100800
3'Desthiobiotin-TEG		14490	18270	27090	67410	134190
THIOL MODIFICATIONS						
3'Thiol Modifier C 3 S-S		9000	9000	13800	34200	67800
5' Dithiol		16200	19800	30000	74400	145800
Int Dithiol		16200	19800	30000	74400	145800
3' Dithiol		26400	26400	39600	98900	198900
5'Thiol Modifier C6 S-S		11280	11280	18000	35400	70200

PRODUCTS

DNA MODIFICATIONS

Alkynes	Price (Rs)					
Synthesis Scale	25 nmole	100 nmole	250 nmole	1 umole	5 umole	10 umole
5'Hexynyl		7560	9450	14490	28350	56700
5'5-Octadiynyl dU		11340	14490	21420	53550	106470
Int 5-Octadiynyl dU		11340	14490	21420	53550	106470
3'5-Octadiynyl dU		15120	18270	27090	68040	134820
Quenchers						
5'Iowa Black® RQ		6804	8568	13230	32130	64260
3'Iowa Black® RQ		6804	8568	13230	32130	64260
5'Iowa Black FQ		6804	8568	13230	32130	64260
3'Iowa Black FQ		6804	8568	13230	32130	64260
3'Black Hole Quencher 1		7200	9000	13800		
3'Black Hole Quencher 2		7200	9000	13800		
3'Dabcyl		7200	9000	13800	35910	71190
Spacers						
5'C3 Spacers		3600	4560	6726	14490	28350
Int C3 Spacers		3600	4560	6783	14490	28350
3'C3 spacers		3600	4560	6783	14490	28350
5'PC Spacers		12600	15600	23400	60480	120960
Int PC Spacers		12600	15600	23400	60480	120960
3'Hexanediol		3240	4200	5400	14490	28350
5'Spacer 9		3600	4560	6840	14490	28350
Int Spacer 9		3600	4560	6840	14490	28350
3'Spacer 9		5985	6150	9000	18900	37800
5'Spacer 18		4560	5400	8160	17010	34020
Int Spacer 18		4560	5400	8160	17010	34020
3'Spacer 18		7080	7080	10800	22680	45360
5'1'-2'-Dideoxyribose (dspacer)		7616	9075	13800	28350	56700
Int 1'-2'-Dideoxyribose (dspacer)		7680	9000	13800	28350	56700
3'1'-2'-Dideoxyribose (dspacer)		12600	12600	18000	37800	75600
Phosphorothioate Bonds		350	350	508	2175	3045
Modified Bases						
5'2-Aminopurine		13800	13800	20400	42840	85050
Int 2-Aminopurine		13800	13800	20400	42840	85050
3'2-Aminopurine		18000	18000	27000	56700	113400
5'2,6-Diaminopurine (2-Amino-dA)		16200	16200	25200	65520	130410
Int 2,6-Diaminopurine (2-Amino-dA)		16200	16200	25200	65520	130284
3'2,6-Diaminopurine (2-Amino-dA)		20825	20825	33000	86310	172620
5'5-Bromo dU		7200	7200	10800	28350	56700
Int 5-Bromo dU		7200	7200	10800	28350	56700
5'Deoxy Uridine	756	945	1134	1701	2898	5670
Int Deoxy Uridine	756	945	1134	1701	2898	5670
3'Deoxy Uridine		945	1134	1701	2898	5670
3'Inverted dT		3480	4080	6360	17010	33390
5'Inverted Dideoxy-T		12600	15750	23310	46620	93240

PRODUCTS

DNA MODIFICATIONS

Modified Bases	Price (Rs)					
Synthesis Scale	25 nmole	100 nmole	250 nmole	1 umole	5 umole	10 umole
3' Dideoxy -C		9000	11280	17400	45360	90090
5' 5- Methyl dC		4560	5400	8160	17010	34020
Int 5- Methyl dC		4560	5400	8160	17010	34020
3' 5- Methyl dC		4560	5400	8160	22680	45360
5'Deoxy Inosine	756	945	1134	1701	2898	5670
Int Deoxy Inosine	756	945	1134	1701	2898	5670
3' Deoxy inosine		945	1134	1701	3654	7182
Locked Nucleic Acids (LNA's)						
5' 5- Nitroindole		13800	13800	20400	42840	85050
Int 5- Nitroindole		13800	13800	20400	42840	85050
3' 5- Nitroindole		18000	18000	27000	56700	113400
2'-O- Methyl RNA Bases		784	1181	1750	5880	10780
3' Ribo primers						
3' Ribo A		2760	3600	5400		
3' Ribo C		2760	3600	5400		
3' Ribo G		2760	3600	5400		
3' Ribo U		2760	3600	5400		
Iso-dC & Iso-dG						
5'IsodG		6720	6720	13800		
Int IsodG		6720	6720	13800		
5' Iso dC		6720	6720	13800		
Int IsodC		6720	6720	13800		
5' Hydroxymethyl dC		34020	42210	63000	188370	376110
Int Hydroxymethyl dC		34020	42210	63000	188370	376110
3' Hydroxymethyl dC		44100	55440	81900	244440	488880
Fluoro Bases						
5' 2' Fluoro C		3000	3000	4200	11340	22050
Int 2' Fluoro C		3000	3000	4200	11340	22050
3' 2' Fluoro C		3600	3600	5400	14490	28980
5' 2' Fluoro U		3000	3000	4200	11340	22050
Int 2' Fluoro U		3000	3000	4200	11340	22050
3' 2' Fluoro U		3600	3600	5400	14490	28980
5' 2' Fluoro A		3000	3000	4200	11340	22050
Int 2' Fluoro A		3000	3000	4200	11340	22050
3' 2' Fluoro A		3600	3600	5400	14490	28980
5' 2' Fluoro G		3000	3000	4200	11340	22050
Int 2' Fluoro G		3000	3000	4200	11340	22050
3' 2' Fluoro G		3600	3600	5400	14490	28980

PRODUCTS

DNA MODIFICATIONS

Click Chemistry	
Modification Name	
5', Int, 3' Azide (NHS Ester)	5', 3', or internal azide functional group
5' Hexynyl	5' alkyne functional group
5', Int, 3' 5-Octadiynyl dU	5' 3', or internal alkyne functional group
5', Int Biotin (Azide)	5' or internal biotin functional group
5', Int 6-FAM (Azide)	5' or internal 6-FAM functional group
5', Int 5-TAMRA (Azide)	5' or internal 5-TAMRA functional group

DNA MODIFICATIONS FLUOROPHORES

Freedom Dyes						
Dye	5'	Internal	3'	Ex.	Em.	Alternative
6-FAM™ (Fluorescein)	✓		✓	495	520	N/A
MAX (NHS Ester)	✓		✓	524	557	JOE (NHS Ester)
TYE™ 563	✓		✓	549	563	Cy3™
TEX 615	✓		✓	596	613	Texas Red®-X (NHS Ester)
TYE™ 665	✓		✓	645	665	Cy5™
TYE 705	✓		N/A	686	704	Cy5.5™
Alexa Fluor® Dyes						
Dye	5'	Internal	3'	Ex.	Em.	Alternative
Alexa Fluor® 488 (NHS Ester)	✓		✓	492	517	ATTO™ 488 (NHS Ester)
Alexa Fluor® 532 (NHS Ester)	✓		✓	527	553	N/A
Alexa Fluor® 546 (NHS Ester)	✓		✓	555	571	N/A
Alexa Fluor® 594 (NHS Ester)	✓		✓	584	616	ATTO™ 590 (NHS Ester)
Alexa Fluor® 647 (NHS Ester)	✓		✓	650	670	ATTO™ 647N (NHS Ester)
Alexa Fluor® 660 (NHS Ester)	✓		✓	661	691	N/A
Alexa Fluor® 750 (NHS Ester)	✓		✓	753	775	N/A
CY™ Dyes						
Dye	5'	Internal	3'	Ex.	Em.	Alternative
Cy3™	✓	✓	✓	550	564	TYE™ 563
Cy5™	✓	✓	✓	648	668	TYE™ 665
Cy5.5™	✓		✓	685	706	TYE 705
Fluorescein Dyes						
Dye	5'	Internal	3'	Ex.	Em.	Alternative
6-FAM™ (Azide)	✓	✓		496	516	N/A
6-FAM™ (NHS Ester)	✓		✓	496	516	N/A
Fluorescein dT	✓	✓	✓	495	520	N/A
JOE (NHS Ester)	✓		✓	529	555	MAX (NHS Ester)
TET™	✓			522	539	N/A
HEX™	✓			538	555	N/A
LI-COR IRDyes®						
Dye	5'	Internal	3'	Ex.	Em.	Alternative
5' IRDye® 700	✓			684	702	N/A
5' IRDye® 800	✓			791	809	N/A
5' IRDye® 800CW (NHS Ester)	✓			767	791	N/A
ATTO™ Dyes						
Dye	5'	Internal	3'	Ex.	Em.	Alternative
ATTO™ 488 (NHS Ester)	✓		✓	502	522	Alexa Fluor® 488 (NHS Ester)
ATTO™ 532 (NHS Ester)	✓		✓	534	554	N/A
ATTO™ 550 (NHS Ester)	✓		✓	560	575	N/A
ATTO™ 565 (NHS Ester)	✓		✓	570	591	N/A
ATTO™ Rho101 (NHS Ester)	✓		✓	592	609	ROX™ (NHS Ester)
ATTO™ 590 (NHS Ester)	✓		✓	602	624	Alexa Fluor® 594 (NHS Ester)
ATTO™ 633 (NHS Ester)	✓		✓	635	653	N/A
ATTO™ 647N (NHS Ester)	✓		✓	649	662	Alexa Fluor® 647 (NHS Ester)

PRODUCTS

DNA MODIFICATIONS FLUOROPHORES

Rhodamine Dyes						
Dye	5'	Internal	3'	Ex.	Em.	Alternative
Rhodamine Green™-X (NHS Ester)	✓		✓	504	531	N/A
TAMRA™			✓	559	583	N/A
TAMRA™ (NHS Ester)		✓	✓	559	583	N/A
Rhodamine Red™-X (NHS Ester)	✓		✓	574	594	N/A
ROX™ (NHS Ester)	✓		✓	588	608	ATTO™ Rho101 (NHS Ester)
5-TAMRA™ (Azide)	✓	✓		546	579	N/A
WellRED Dyes						
Dye	5'	Internal	3'	Ex.	Em.	Alternative
WellRED D4 Dye	✓			648	666	N/A
WellRED D3 Dye	✓			683	701	N/A
WellRED D2 Dye	✓			763	778	N/A
Other						
Dye	5'	Internal	3'	Ex.	Em.	Alternative
Texas Red®-X (NHS Ester)	✓		✓	598	617	TEX 615
Lightcycler® 640 (NHS Ester)	✓		✓	620	635	N/A
Dy 750 (NHS Ester)	✓			747	776	N/A

Freedom Dyes		Price (Rs)		5'	
Synthesis Scale	100 nmole	250 nmole	1 umole	5 umole	10 umole
6-FAM™ (Fluorescein)	5400	6840	13800	28350	56700
MAX (NHS Ester)	7560	9450	13800	42840	85050
TYE™ 563	6120	7680	11520	36540	72450
TEX 615	7200	9000	13800	42840	85050
TYE™ 665	6120	7680	11520	36540	72450
TYE 705	12000	12000	18000	64890	129150
Alexa Fluor® Dyes				5'	
Alexa Fluor® 488 (NHS Ester)	19800	19800	29400		
Alexa Fluor® 532 (NHS Ester)	27000	27000	40200		
Alexa Fluor® 546 (NHS Ester)	27000	27000	40200		
Alexa Fluor® 594 (NHS Ester)	31200	31200	47400		
Alexa Fluor® 647 (NHS Ester)	19800	19800	29400		
Alexa Fluor® 660 (NHS Ester)	31200	31200	63000		
Alexa Fluor® 750 (NHS Ester)	31200	31200	63000		
CY™ Dyes				5'	
Cy3™	7200	9000	13800	42840	85050
Cy5™	7200	9000	13800	42840	85050
Cy5.5™	8640	10440	16220		

PRODUCTS

DNA MODIFICATIONS FLUOROPHORES

Fluorescein Dyes	Price (Rs)		5'		
Synthesis Scale	100 nmole	250 nmole	1 umole	5 umole	10 umole
6-FAM™ (Azide)	13230	17010	24570	86310	171990
6-FAM™ (NHS Ester)	14490	18270	26460	49770	99540
Fluorescein dT	15930	17850	24780	65520	130410
JOE (NHS Ester)	18000	18000	27200		
TET™	5400	6840	13685	28350	56700
HEX™	5400	8640	13800	28350	56700
LI-COR IRDyes®	5'				
IRDye® 700	9000	11250	17250		
IRDye® 800	9000	11250	17250		
5'IRDye® 800CW (NHS Ester)	26600	26600	37100		
ATTO™ Dyes	5'				
ATTO™ 488 (NHS Ester)	18900	25200	34650		
ATTO™ 532 (NHS Ester)	18900	25200	34650		
ATTO™ 550 (NHS Ester)	18900	25200	34650		
ATTO™ 565 (NHS Ester)	18900	25200	34650		
ATTO™ Rho101 (NHS Ester)	18900	25200	34650		
ATTO™ 590 (NHS Ester)	15750	23940	32130		
ATTO™ 633 (NHS Ester)	18900	25200	34650		
ATTO™ 647N (NHS Ester)	18900	25200	34650		
Rhodamine Dyes	5'				
Rhodamine Green™-X (NHS Ester)	17700	17700	27000		
TAMRA™ (NHS Ester)	9000	11280	18000	64890	129150
Rhodamine Red™-X (NHS Ester)	18000	18000	27000		
ROX™ (NHS Ester)	13800	13800	20400		
5-TAMRA™ (Azide)	15120	18900	28350	99540	198450
WellRED Dyes	5'				
WellRED D4 Dye		23100	34300		
WellRED D3 Dye		23100	34300		
WellRED D2 Dye		23100	34300		
Other	5'				
Texas Red®-X (NHS Ester)	13800	16065	26775		
Lightcycler® 640 (NHS Ester)	34200	34200	51600		
Dy 750 (NHS Ester)	34200	34200	51690		
CY™ Dyes	Internal				
Cy3™	14400	18000	27000	85050	170100
Cy5™	14400	18000	27000	85050	170100
Fluorescein Dyes	Internal				
Fluorescein dT	15930	17850	24780	65520	130410
6-FAM™ (Azide)	15120	18900	28350	99540	198450

DNA MODIFICATIONS FLUOROPHORES

Rhodamine Dyes	Price (Rs)			Internal	
Synthesis Scale	100 nmole	250 nmole	1 umole	5 umole	10 umole
TAMRA™ (NHS Ester)	18000	20400	36000		
5-TAMRA™ (Azide)	17010	21420	32130	112770	224910
Freedom Dyes	3'				
6-FAM™ (Fluorescein)	5400	6840	13800	35910	71190
MAX (NHS Ester)	16200	16200	25200		
TYE™ 563	7200	9000	13800	42210	83160
TEX 615	9000	10800	16200	49770	99540
TYE™ 665	7200	9000	13800	42210	83160
Alexa Fluor® Dyes	3'				
Alexa Fluor® 488 (NHS Ester)	19800	19800	29400		
Alexa Fluor® 532 (NHS Ester)	27000	27000	40200		
Alexa Fluor® 546 (NHS Ester)	27000	27000	40200		
Alexa Fluor® 594 (NHS Ester)	31200	31200	47400		
Alexa Fluor® 647 (NHS Ester)	19800	19800	29400		
Alexa Fluor® 660 (NHS Ester)	31200	31200	63000		
Alexa Fluor® 750 (NHS Ester)	31200	31200	63000		
CY™ Dyes	3'				
Cy3™	8640	10440	16220	49770	99540
Cy5™	8640	10440	16220	49770	99540
Cy5.5™	8640	10440	16220		
Fluorescein Dyes	3'				
6-FAM™ (NHS Ester)	14490	18270	26460	49770	99540
Fluorescein dT	23010	23010	32450		
JOE (NHS Ester)	13800	13800	25200		
ATTO™ Dyes	3'				
ATTO™ 488 (NHS Ester)	18900	25200	34650		
ATTO™ 532 (NHS Ester)	18900	25200	34650		
ATTO™ 550 (NHS Ester)	18900	25200	34650		
ATTO™ 565 (NHS Ester)	18900	25200	34650		
ATTO™ Rho101 (NHS Ester)	18900	25200	34650		
ATTO™ 590 (NHS Ester)	15750	23940	32130		
ATTO™ 633 (NHS Ester)	18900	25200	34650		
ATTO™ 647N (NHS Ester)	18900	25200	34650		
Rhodamine Dyes	3'				
Rhodamine Green™-X (NHS Ester)	17700	17700	27000		
TAMRA™	7680	8925	13685		
TAMRA™ (NHS Ester)	9000	11280	18000		
Rhodamine Red™-X (NHS Ester)	18000	18000	27000		
ROX™ (NHS Ester)	14490	14490	21420		
Other	3'				
Texas Red®-X (NHS Ester)	16900	20150	29250		
Lightcycler® 640 (NHS Ester)	34200	34200	51600		

PRODUCTS

CUSTOM RNA

Custom RNA Synthesis	Price (Rs)				
Product	100nmole	250nmole	1 µmole	5 µmole	10 µmole
RNA Bases	500/base	784/base	1575/base	4410/base	7840/base
2'-O-Methyl RNA Bases	784/base	1181/base	1750/base	5880/base	10780/base
Chimeric DNA Bases	42/base	83/base	190/base	882/base	1667/base
Antisense					
Phosphorothioate Bonds	350/Bond (Rs)	350/Bond (Rs)	508/Bond (Rs)	2175/Bond (Rs)	3045/Bond (Rs)
5-Methyl dC Bases	4375/1base	5275/1base	7875/1base	13230/1base	26460/1base
Na + Salt Exchange	5775	5775	5775	13218	13218

Large-Scale RNA	Services
RNA, RNA analogs and chimeras are available in quantities up to ten grams. IDT continues the tradition of providing researchers with the highest quality RNA oligo synthesis and offers various services for larger quantities.	Target validation and development programs for siRNA, DsiRNA, aptamers, ribozymes, antisense and others • Extensive QC packages tailored to researchers' needs • Sterile-filtered oligo preparations available, endotoxin free • Harmonized protocols simple transfer to our kilo-scale cGMP manufacturing partner

RNA oligos	Length of oligo
100 nmole	10–90 Bases
250 nmole	5–90 Bases
1 µmole	5–90 Bases
5 µmole	5–50 Bases
10 µmole	5–50 Bases

Please contact us for guaranteed yeild.

Visit www.idtdna.com for details.

PRODUCTS

RNA MODIFICATIONS

Phosphorylation	Price (Rs)				
Synthesis Scale	100 nmole	250 nmole	1 umole	5 umole	10 umole
5' Phosphorylation	2100	2660	4760	9520	18900
3' Phosphorylation	2660	3220	5320	26600	26580
Attachment Chemistry & Linkers					
5' Acrydite™	8400	10500	16100	31500	63000
3' Cholesteryl-TEG	8400	8400	25200	67200	126000
5'-I-Linker 1.2	5880	7980	12180	30800	60900
5' Digoxigenin NHS Ester	12180	12180	18900		
3' Digoxigenin NHS Ester	12180	12180	18900		
5' Azide (NHS Ester)	9450	11340	17010	58590	115920
Int Azide (NHS Ester)	13230	17010	25200	88200	175770
AMINO MODIFIERS					
5' Amino Modifier C6	2520	3220	5320	10500	21000
5' Amino Modifier C12	5880	7420	11060	22400	44100
5' Amino Modifier C6dT	13160	16100	23800	47600	94500
Int Amino Modifier C6dT	13160	16100	23800	47600	94500
3' Amino Modifier C6dT	21000	21000	31500	63000	126000
3' Amino Modifier	2520	3240	4560	11280	22800
BIOTINYLATION					
5' Biotin	3600	4750	9000	18900	36000
3' Biotin	5400	6840	10440	26400	52200
5' Biotin dT	16200	16200	25200	62400	124200
Int Biotin dT	16200	16200	25200	62400	124200
3' Biotin dT	16200	16200	25200	62400	124200
5' Biotin-TEG	6480	8160	10800	27600	54000
3' Biotin-TEG	5400	6840	9000	22800	45000
5' Dual Biotin	18000	18000	27000	40800	84500
THIOL MODIFICATIONS					
3' Thiol Modifier C3 S-S	9000	9000	13800	34200	67800
5' Dithiol	16200	19800	30000	74400	145800
Int Dithiol	16200	19800	30000	74400	145800
3' Dithiol	26400	26400	39600	98900	198900
5' Thiol Modifier C6 S-S	11280	11280	18000	35400	70200
Alkynes					
5' Hexynyl	7560	9450	14490	28350	56700
5' 5-Octadiynyl dU	11340	14490	21420	53550	106470
Int 5-Octadiynyl dU	11340	14490	21420	53550	106470
3' 5-Octadiynyl dU	15120	18270	27090	68040	134820

PRODUCTS

RNA MODIFICATIONS

Quenchers	Price (Rs)				
Synthesis Scale	100 nmole	250 nmole	1 umole	5 umole	10 umole
5' Iowa Black FQ	6804	8568	13230	32130	64260
3' Iowa Black FQ	6804	8568	13230	32130	64260
5' Iowa Black RQ	6804	8568	13230	32130	64260
5' Iowa Black RQ	6804	8568	13230	32130	64260
3' Dabcyl	7200	9000	13800	35910	71190
Spacers					
5'C3 Spacers	3600	4560	6726	14490	28350
Int C3 Spacers	3600	4560	6783	14490	28350
3' C3 spacers	3600	4560	6783	14490	28350
5' PC Spacers	12600	15600	23400	60480	120960
Int PC Spacers	12600	15600	23400	60480	120960
3' Hexanediol	3240	4200	5400	14490	28350
5' Spacer 9	3600	4560	6840	14490	28350
Int Spacer 9	3600	4560	6840	14490	28350
3' Spacer 9	5985	6150	9000	18900	37800
5' Spacer 18	4560	5400	8160	17010	34020
Int Spacer 18	4560	5400	8160	17010	34020
3' Spacer 18	7080	7080	10800	22680	45360
5' 1'-2'-Dideoxyribose (dspacer)	7616	9075	13800	28350	56700
Int 1'-2'-Dideoxyribose (dspacer)	7680	9000	13800	28350	56700
3' 1'-2'-Dideoxyribose (dspacer)	12600	12600	18000	37500	75600
Modified Bases					
5' 2- Aminopurine	13800	13800	20400	42840	85050
Int 2- Aminopurine	13800	13800	20400	42840	85050
3' 2 Aminopurine	18000	18000	27000	56700	113400
5' 2,6- Diaminopurine (2-Amino-dA)	16200	16200	25200	65520	130410
Int 2,6- Diaminopurine (2-Amino-dA)	16200	16200	25200	65520	130284
3' 2,6- Diaminopurine (2-Amino-dA)	20825	20825	33000	86310	172620
5' 5- Bromo dU	7200	7200	10800	28350	56700
Int 5- Bromo dU	7200	7200	10800	28350	56700
5' Inverted Dideoxy-T	12600	15750	23310	46620	93240
5' Deoxy Uridine	945	1134	1701	2898	5670
Int Deoxy Uridine	945	1134	1701	2898	5670
3' Deoxy Uridine	945	1134	1701	2898	5670
3' Inverted dT	3480	4080	6360	17010	33390
3' Dideoxy-C	9000	11280	17400	45360	90090
5' 5- Methyl dC	4560	5400	8160	17010	34020
Int 5- Methyl dC	4560	5400	8160	17010	34020
3' 5- Methyl dC	4560	5400	8160	22680	45360
5' Deoxy Inosine	945	1134	1701	2898	5670
Int Deoxy Inosine	945	1134	1701	2898	5670
3' Deoxy inosine	945	1134	1701	3654	7182

PRODUCTS

RNA MODIFICATIONS

Locked Nucleic Acids (LNA's)			Price (Rs)		
Synthesis Scale	100 nmole	250 nmole	1 umole	5 umole	10 umole
5' 5'-Nitroindole	13800	13800	20400	42840	85050
Int 5'-Nitroindole	13800	13800	20400	42840	85050
3' 5'-Nitroindole	18000	18000	27000	56700	113400
Fluoro Bases					
5' 2' Fluoro C	3000	3000	4200	11340	22050
Int 2' Fluoro C	3000	3000	4200	11340	22050
3' 2' Fluoro C	3600	3600	5400	14490	28980
5' 2' Fluoro U	3000	3000	4200	11340	22050
Int 2' Fluoro U	3000	3000	4200	11340	22050
3' 2' Fluoro U	3600	3600	5400	14490	28980
5' 2' Fluoro A	3000	3000	4200	11340	22050
Int 2' Fluoro A	3000	3000	4200	11340	22050
3' 2' Fluoro A	3600	3600	5400	14490	28980
5' 2' Fluoro G	3000	3000	4200	11340	22050
Int 2' Fluoro G	3000	3000	4200	11340	22050
3' 2' Fluoro G	3600	3600	5400	14490	28980

RNA MODIFICATIONS FLUOPHORES

Freedom Dyes						
Dye	5'	Internal	3'	Ex.	Em.	Alternativ
6-FAM TM (Fluorescein)	✓		✓	495	520	N/A
MAX (NHS Ester)	✓		✓	524	557	JOE (NHS Ester)
TYE TM 563	✓		✓	549	563	Cy3 TM
TEX 615	✓		✓	596	613	Texas Red [®] -X (NHS Ester)
TYE TM 665	✓			645	665	Cy5 TM
TYE 705	✓			686	704	Cy5.5 TM
CY TM Dyes						
Dye	5'	Internal	3'	Ex.	Em.	Alternative
Cy3 TM	✓	✓	✓	550	564	TYE TM 563
Cy5 TM	✓	✓	✓	648	668	TYE TM 665
Cy5.5 TM	✓			685	706	TYE 705
Fluorescein Dyes						
Dye	5'	Internal	3'	Ex.	Em.	Alternative
6-FAM TM (Azide)	✓	✓		496	516	N/A
6-RAM TM (NHS Ester)	✓		✓	496	516	N/A
Fluorescein dT	✓	✓	✓	495	520	N/A
JOE (NHS Ester)	✓		✓	529	555	MAX (NHS Ester)
TET TM	✓			522	539	N/A
HEX TM	✓			538	555	N/A
ATTO TM Dyes						
Dye	5'	Internal	3'	Ex.	Em.	Alternative
ATTO TM 488 (NHS Ester)	✓		✓	502	522	Alexa Fluor [®] 488 (NHS Ester)
ATTO TM 532 (NHS Ester)	✓		✓	534	554	N/A
ATTO TM 550 (NHS Ester)	✓		✓	560	575	N/A
ATTO TM 565 (NHS Ester)	✓		✓	570	591	N/A
ATTO TM Rho101 (NHS Ester)	✓		✓	592	609	ROX TM (NHS Ester)
ATTO TM 590 (NHS Ester)	✓		✓	602	624	Alexa Fluor [®] 594 (NHS Ester)
ATTO TM 633 (NHS Ester)	✓		✓	635	653	N/A
ATTO TM 647N (NHS Ester)	✓		✓	649	662	Alexa Fluor [®] 647 (NHS Ester)

RNA MODIFICATIONS FLUOROPHORES

Freedom Dyes	Price (Rs)				
Synthesis Scale	100 nmole	250 nmole	1 umole	5 umole	10 umole
6-FAM™ (Fluorescein)	5400	6840	13800		
MAX (NHS Ester)	7560	9450	13800	42840	85050
TYE™ 563	6120	7680	11520	36540	72450
TEX 615	7200	9000	13800	42840	85050
TYE™ 665	6120	7680	11520	36540	72450
TYE 705	12000	12000	18000	64890	129150
CY™ Dyes	5'				
Cy3™	7200	9000	13800	42840	85050
Cy5™	7200	9000	13800	42840	85050
Cy5.5™	8640	10440	16220		
Fluorescein Dyes	5'				
6-FAM™ (Azide)	13230	17010	24570	86310	171990
Fluorescein dT	15930	17850	24780		
TET™	5670	7182	14490	28350	56700
HEX™	5670	7182	14490	28350	56700
JOE (NHS Ester)	18900	18900	28350		
ATTO™ Dyes	5'				
ATTO™ 488 (NHS Ester)	18900	25200	34650		
ATTO™ 532 (NHS Ester)	18900	25200	34650		
ATTO™ 550 (NHS Ester)	18900	25200	34650		
ATTO™ 565 (NHS Ester)	18900	25200	34650		
ATTO™ Rho101 (NHS Ester)	18900	25200	34650		
ATTO™ 590 (NHS Ester)	15750	23940	32130		
ATTO™ 633 (NHS Ester)	18900	25200	34650		
ATTO™ 647N (NHS Ester)	18900	25200	34650		
Fluorescein Dyes	Internal				
Fluorescein dT	17010	18900	26460	65520	130410
6-FAM™ (Azide)	15120	18900	28350	99540	198450
CY™ Dyes	Internal				
Cy3™	7200	9000	13800	42840	85050
Cy5™	7200	9000	13800	42840	85050
Freedom Dyes	3'				
6-FAM™ (Fluorescein)	5400	6840	13800	35910	71190
MAX (NHS Ester)	17010	17010	26460		
TYE™ 563	7560	9450	N/A	42210	83160
TEX 615	9000	10800	16200	49770	99540

RNA MODIFICATIONS FLUOPHORES

CY™ Dyes	Price (Rs) 3'				
Synthesis Scale	100 nmole	250 nmole	1 umole	5 umole	10 umole
Cy3™	8640	10440	16220	49770	99540
Cy5™	8640	10440	16220	49770	99540
Fluorescein Dyes	3'				
Fluorescein dT	24570	24570	34650	86310	172620
6-FAM™ (NHS Ester)	14490	18270	26460	49770	99540
JOE (NHS Ester)	14490	14490	26460		
ATTO™ Dyes	3'				
ATTO™ 488 (NHS Ester)	18900	25200	34650		
ATTO™ 532 (NHS Ester)	18900	25200	34650		
ATTO™ 550 (NHS Ester)	18900	25200	34650		
ATTO™ 565 (NHS Ester)	18900	25200	34650		
ATTO™ Rho101 (NHS Ester)	18900	25200	34650		
ATTO™ 590 (NHS Ester)	15750	23940	32130		
ATTO™ 633 (NHS Ester)	18900	25200	34650		
ATTO™ 647N (NHS Ester)	18900	25200	34650		

PRODUCTS

FUNCTIONAL GENOMICS

Dicer-Substrate siRNA Screening Duplexes (DsiRNAs)		
	Affinity-Purified Tube Duplexes (Rs)	Affinity-Purified Plate Duplexes (Rs)
2 nmole	9145/duplex	7220/duplex
10 nmole	13956/duplex	11070/duplex
40 nmole	21657/duplex	N/A

Ideal for small-scale in-vitro applications

Screening DsiRNA

Ideal for small scale in vitro applications, screening DsiRNA duplex pricing includes affinity purification or for more sensitive assays, RNase-Free HPLC Purification is available for an additional charge. In addition, each duplex is identified by ESI mass spectrometry. Mass spectrometry data is provided free on IDT's website Screening DsiRNA sequences must be between 24 and 30 bases and 100% complementary with up to a 3-base overhang

Duplex Guarantee	Tube price (Rs)	Plate Price (Rs)
2 nmole Screening DsiRNA Duplex	10120 / Duplex	8250 / Duplex
10 nmole Screening DsiRNA Duplex	14750 / Duplex	11870 / Duplex
40 nmole Screening DsiRNA Duplex	22450 / Duplex	N/A

TriFECTa™ Kit Contents:	TriFECTa™
- Three target-specific Dicer-Substrate siRNA duplexes (2 nmoles each) from IDT database - HPRT-S1 DS Positive Control duplex (1 nmole) - DS Scrambled-Neg, universal negative control duplex (1 nmole) - Rnase Free Duplex Buffer (100mM KAc/30 mM HEPES pH 7.5)	The TriFECTa™ kit contains 3 predesigned DsiRNA duplexes, 3 control sequences, and RNase-free duplex buffer to perform RNAi experiments.

The complete TriFECTa™ Kit is Rs. 43500	
These Products are not for use in humans or Non-human Animals and may not be used for human or Veterinary Diagnostic, Prophylactic or Therapeutic Purposes.	
DsiRNA Validated Control Duplexes and Reagents - A variety of control reagents are needed to perform RNAi experiments. IDT offers a collection of validated control reagents premade for immediate delivery. - Exogenous reporter gene positive controls - Universal negative controls	Controls include: - Fluorescent transfection efficiency control duplexes - Endogenous gene positive control duplexes and primers - Internal control primers for qRT-PCR analysis

Validated Control DsiRNA Duplexes and other Control Reagents

A variety of control reagents are needed to perform RNAi experiments. The following collection of validated control reagents are available premade for immediate delivery. Inquire for custom controls for special needs.

Fluorescent Transfection Efficiency Control Duplexes

PRODUCTS

FUNCTIONAL GENOMICS

A successful RNAi experiment starts with good transfection. It is good practice to optimize transfection conditions for each different cell line studied as well as for each different form of nucleic acid employed (for example, large DNA plasmids often require different transfection conditions than short dsRNA oligos). It may be necessary to empirically test a number of different cationic lipids (or other approaches) to establish a protocol that performs optimally with each cell line employed. Use of a dye-labeled transfection control oligo allows for rapid, easy screening of many reagents in parallel.

When optimizing transfection methods, IDT recommends using dye-labeled oligos at 10 nM (or less); higher concentrations can increase the amount of nonspecific binding which can cause background and falsely elevate the apparent success of transfection.

The following dye-labeled RNA duplexes are available for this purpose:		
Product	1nm (Rs)	5nm (Rs)
TYE 563™ DS Transfection Control	8260	21000
TEX 613™ DS Transfection Control	8260	21000
Cy3™ Transfection Control	8260	21000

Endogenous Gene Positive Control Duplexes and Primers

Use of dye-labeled control oligos is not sufficient by itself to optimize transfection. It is possible to get seemingly good dye-oligo uptake without delivery of the oligos into the correct cytoplasmic location for functional RNAi. Transfection conditions that “pass” the dye-labeled study should also be tested for functional knockdown using a positive control siRNA. The “HPRT-S1 DS Positive Control” duplex can be used for this purpose. When transfection is “good”, these sequences reduce HPRT mRNA levels by >90% at 24 hours when used at 10 nM. Please note that the HPRT control is intended only to develop good transfection methods and is best examined at 24 or 48 hour time points. Knockdown of HPRT can slow cell growth and affect cell viability if incubation extends > 72 hours. Due to sequence similarity, the HPRT-S1 control duplex can be employed in human, mouse, rat, and Chinese hamster (CHO) cells. Other genomes may require customized controls.

Product	1nm (Rs)	5nm (Rs)
HPRT-S1 DS Positive Control (Human/Mouse/Rat)	6300	16100
HPRT-Bt DS Positive Control (Cow)	6300	16100
HPRT-Bt DS Positive Control (Pig)	6300	16100

IDT recommends studying functional transfection efficiency by examining mRNA levels at 24 hours post transfection. Alternatively, Western blots can be performed at 48-72 hours. Validated primers for SYBR Green qRT-PCR assays are available for the following organisms:

SYBR-Green Q-PCR Primer Sets	1nm (Rs)	5nm (Rs)
HPRT SYBR-Green primers (Human)	2755	6390
HPRT SYBR-Green primers (Mouse)	2755	6390
HPRT SYBR-Green primers (Rat)	2755	6390
HPRT SYBR-Green primers (Chinese hamster)	2755	6390
HPRT SYBR-Green primers (Cow)	2755	6390
HPRT SYBR-Green primers (Pig)	2755	6390

It is often useful to have cloned gene fragments available to establish quantitative standard curves when performing qRT-PCR. The assay amplicon for each of the above HPRT positive control qRT-PCR reactions has been cloned into pUC12 and sequence verified. Clones are provided as 0.5 ug of purified plasmid DNA.

PRODUCTS

FUNCTIONAL GENOMICS

Cloned Purified Plasmids	Accession #	0.5 µg (Rs)
0.5 µg Human HPRT Cloned qControl	NM_000194	21750
0.5 µg Mouse HPRT Cloned qControl	NM_013556	21750
0.5 µg Rat HPRT Cloned qControl	NM_012583	21750
0.5 µg Ch Hamster HPRT Cloned qControl	J00060	21750
0.5 µg Cow HPRT Cloned qControl	NM_001034035	21750

Internal Control Primers for qRT-PCR Analysis

When qRT-PCR is performed it is necessary to have an internal standard to control for RNA loading. While many different “housekeeping” gene have been used for this purpose (such as β -Actin, GAPDH, or Cyclophilin), most of these genes show fluctuation in expression levels with different treatments and are not as invariant as is needed for a true internal qRT-PCR control. IDT has developed the following SYBR-Green assays suitable for use as an “internal normalization standard” in qRT-PCR analysis (??Ct method):

Product	1nm (Rs)	5nm (Rs)
RPLP0 SYBR-Green primers (Human)	2698	6525
RPL23 SYBR-Green primers (Mouse)	2698	6525
RPL23 SYBR-Green primers (Rat)	2698	6525
RPL23 SYBR-Green primers (Chinese hamster)	2698	6525
RPLP0 SYBR-Green primers (Cow)	2698	6525
RPLP0 SYBR-Green primers (Pig)	2698	6525

It is often useful to have cloned gene fragments available to establish quantitative standard curves when performing qRT-PCR. The assay amplicon for each of the above internal control qRT-PCR reactions has been cloned into pUC12 and sequence verified. Clones are provided as 0.5 ug of purified plasmid DNA

Cloned Purified Plasmids	Accession #	0.5 µg (Rs)
0.5 µg Human RPLP0 Cloned qControl	NM_001002	21750
0.5 µg Mouse RPL23 Cloned qControl	NM_022891	21750
0.5 µg Rat RPL23 Cloned qControl	NM_001007599	21750
0.5 µg Ch. Hamster RPL23 Cloned qControl	Not Assigned	21750
0.5 µg Cow RPLP0 Cloned qControl	NM_001012682	21750

Exogenous Reporter Gene Positive Controls

Reporter genes can be used both as positive controls and as negative controls and so are very useful reagents. If your cell line expresses the reporter either stably or via co-transfection of an expression plasmid, the anti-EGFP or anti-FLuc DsiRNAs can function as a positive control. If your cell line does not express these reporter genes, then the anti-EGFP or anti-FLuc DsiRNAs can function as negative controls. Importantly, these DsiRNAs are validated, functional duplexes with known efficient RISC loading and so offer an added level of “control” that non-targeting sequences cannot offer. Note that these duplexes target standard enhanced green fluorescent protein (EGFP) or firefly luciferase (FLuc) and not newer, codon optimized variants (for example, FLuc-S1 will target the firefly luciferase gene in pGL2 and pGL3 but not pGL4 vectors).

Product	1nm (Rs)	5nm (Rs)
EGFP-S1 DS Positive Control	6390	16300
FLuc-S1 DS Positive Control	6390	16330
RLuc-S1 DS Positive Control	6390	16330

PRODUCTS

FUNCTIONAL GENOMICS

Universal Negative Control

A negative control duplex has been developed which does not target any sequence in the human, mouse, or rat transcriptomes. It can be employed as a "universal negative control" for DsiRNA transfections. This is a non-targeting sequence. The EGFP and FLuc DsiRNAs may also be used as negative controls if functional, targeting duplexes are desired (see above).

Product	1nm (Rs)	5nm (Rs)
EGFP-S1 DS Positive Control	6390	16300
FLuc-S1 DS Positive Control	6390	16330
RLuc-S1 DS Positive Control	6390	16330

Visit www.idtdna.com for a map of the plasmid clones in PDF format

Product Configuration

ddRNAi				
ddRNAi	Purification	Guaranteed Yield	Tube Price (Rs)	Plate Price (Rs)
4-nmole ddRNAi Oligo	Standard Desalt	4 nmoles	85/base	43/base

Product	1 nmole (Rs)	5 nmole (Rs)
5' M.R.S. (multiple restriction site) Linker	15313	52063
3' Cloning Linkers	15313	52063

3-Pack - 3 Linker Types - 1 nmole each, Rs. 39373/-

miRNA Starfire®	IDT offers multiple miRNA products for researchers:
- Complete kit for 25 labeling reactions - Linkers are provided lyophilized and ready for use in cloning - Universal template - Custom probe synthesis - Refi II kit	- Internal RNA control oligos 454 Adapter primer sets - miRFire™ products for generating radiolabeled oligo probes - to identify small RNAs and analyze miRNA gene expression

Visit www.idtdna.com for a complete line of miRFire

Products for generating radiolabeled oligo probes.

miRFire Nucleic Acid Labeling System

miRNA StarFire® is a proprietary labeling system for generating radiolabeled oligo probes with 10-fold greater specific activity than traditional 5'-end labeling with polynucleotide kinase. It is based on 3'-end labeling with DNA polymerase. This labeling method is particularly useful for probes to identify small regulatory RNA and analyze the expression of microRNA genes. 1-3 For more information, please see our tech bulletin by clicking [here](#).

miRNA StarFire® Complete Kit	miRNA StarFire® Universal Template	miRNA StarFire® Refill Kit
Rs. 21,000	Rs. 37100	Rs. 16500
Includes: Exo-Klenow DNA Polymerase StarFire® 10X Buffer Mix StarFire® Stop Buffer One PAGE-purified StarFire® Custom Probe (up to 50 bases) StarFire® Universal Template	Sufficient for 300 labeling reactions 0.5 OD (in single tube) HPLC Purified HPLC Purified Quality Control checked by mass spectrometry and CE	Sufficient for 25 labeling reactions Exo-Klenow DNA Polymerase StarFire® 10X Buffer Mix StarFire® Stop Buffer StarFire® Universal Template

PRODUCTS

FUNCTIONAL GENOMICS

miRCat™

Product	Price (Rs)	
miRCat Small RNA Cloning Kit Small, RNA cloning kit to identify small RNAs in any species in any tissue	77000	
miRCat-33 Conversion Oligo Pack	1 nmole (Rs)	5 nmoles (Rs)
	18900	52063

Click to www.idtdna.com for more information on IDT's full line of Functional Genomics Products

PRIME TIME™ products for Gene Expressions & Genotyping Assay

PrimeTime® qPCR Primers

- The same primer pairs found in the PrimeTime qPCR Assays, mixed and delivered in a single tube. These primer sets are ideal for use with SYBR Green, EvaGreen, and other intercalating dyes, where no probe is needed

Description	Pricing
Pre-designed PrimeTime qPCR Primers for SYBR assays	5,400/- per pair of primers

PrimeTime® qPCR Probes

- Dual-labeled probes are available with a wide variety of dyes and quenchers.
- Express probes are ready for shipment in a single working day.
- Ultra-small-scale Mini Probes allow you to try out a new probe or screen the expression levels of many genes.
- Choose ZEN Double-Quenched Probes for superior performance compared to traditional dual-labeled probes.

PrimeTime™ qPCR

PrimeTime qPCR Assays are offered in three different sizes to meet any qPCR experimental need. In addition, for the Standard and XL sizes, selection of dye-quencher combination and primer to probe ratio can be specified to meet unique experimental demands.

Assays consist of a forward primer, a reverse primer, and a dual-labeled probe all delivered in a single tube. Each Assay is made to order with estimated shipping in 2 to 4 days from order receipt. Each oligo undergoes 100% QC by mass spectrometry and all QC results are provided free of charge to the customer on the IDT website.

	Reactions (20µL)	Price (Rs) ((FAM/ZEN/IBFQ))	Price (Rs) (Other Dye & Quencher combinations) ¹	Probe (nmoles) ²	Primers (nmoles) ²
PrimeTime™ MiniqPCR Assay	100	11700	N/A	0.5	1
PrimeTime™ Standard qPCR Assay	500	19071	23283	2.5	2.5-10
PrimeTime™ XL qPCR Assay	2500	49432	55984	12.5	12.5-50

See table below for available dye quencher combinations

The primer to probe ratio may be specified by the customer except for the PrimeTime Mini.

Available Dye and Quencher Combinations for PrimeTime qPCR Assays

5' Dye - IntZEN - 3' Quencher	Mini	Standard	XL
6-FAM/ZEN/IBFQ	✓	✓	✓
HEX/ZEN/IBFQ		✓	✓
TET/ZEN/IBFQ		✓	✓
5' Dye - 3' Quencher			
6-FAM/TAMRA		✓	✓
Cy5/IBRQ		✓	✓

PrimeTime® qPCR Assays

- Primers and probe mixed and delivered in a single tube.
- Use the ordering tools for guaranteed performance.
- Select from 5 quencher combinations and 3 reactions scales.
- Choose ZEN Double-Quenched Probes in your Assay for superior performance compared to traditional dual-labeled probes.
- PrimeTime® qPCR Plates
- Use the online design tool to create your own master plate; just cut, copy, paste, and fill in as you would with Excel
- Select from predesigned assays for human, mouse, or rat; or simply enter your own primer and probes sequences manually. Order assays with different dye-quencher combinations in the same plate.
- All that is required is a minimum order of 24 assays or primer pairs per plate. Generate your own replicate plates for lower cost per reaction.

Prime Time Dual Labeled DNA Probes with Internal ZEN quencher

Reporter: 5' 6-FAM

Quencher (with Internal ZEN)	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black FQ	Mini	0.5 nmoles	6750
	Eco	2.5 nmoles	13000
	100 nm	10 nmoles	27000
	250 nm	25 nmoles	37800
	1 umole	50 nmoles	56700

Reporter: TET

Quencher (with Internal ZEN)	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black FQ	100 nm	10 nmoles	33300
	250 nm	25 nmoles	47700
	1 umole	50 nmoles	70200

Reporter: HEX

Quencher (with Internal ZEN)	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black FQ	100 nm	10 nmoles	33300
	250 nm	25 nmoles	47700
	1 umole	50 nmoles	70200

Reporter: MAX

Quencher (with Internal ZEN)	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black FQ	100 nm	2 nmoles	42300
	250 nm	8 nmoles	49500
	1 umole	20 nmoles	73800

Reporter: JOE NHS Ester

Quencher (with Internal ZEN)	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black FQ	250 nm	8 nmoles	56700
	1 umole	20 nmoles	85500

PRIMETIME™ DUAL-LABELED DNA PROBES

Reporter: 5'6-FAM™

PrimeTime™ Dual-labeled DNA Probes

PrimeTime Dual-labeled DNA probes are licensed for use in the 5 Prime Nuclease Real-Time PCR assay (with companion dye and quencher licenses).

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Black Hole Quencher® 1	100 nmole	10 nmoles	21000
	250 nmole	25 nmoles	30450
	1 µmole	50 nmoles	44100
3' Black Hole Quencher® 2	100 nmole	10 nmoles	21000
	250 nmole	25 nmoles	30450
	1 µmole	50 nmoles	45675
3'TAMRA-Sp	100 nmole	10 nmoles	22050
	250 nmole	25 nmoles	31080
	1 µmole	50 nmoles	46620
3'TAMRA NHS Ester-Sp	250 nmole	8 nmoles	44730
	1 µmole	20 nmoles	60900

Reporter: 5' MAX 550

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® FQ	100 nmole	2 nmoles	24650
	250 nmole	8 nmoles	28000
	1 µmole	20 nmoles	50400
3' Black Hole Quencher® 1	100 nmole	2 nmoles	32900
	250 nmole	8 nmoles	38500
	1 µmole	20 nmoles	57400
3' Black Hole Quencher® 2	100 nmole	2 nmoles	32900
	250 nmole	8 nmoles	39875
	1 µmole	20 nmoles	58220

Reporter: 5' HEX™

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® FQ	100 nmole	10 nmoles	23200
	250 nmole	25 nmoles	32635
	1 µmole	50 nmoles	49300
3' Black Hole Quencher® 1	100 nmole	10 nmoles	26825
	250 nmole	25 nmoles	38425
	1 µmole	50 nmoles	56550
3' Black Hole Quencher® 2	100 nmole	10 nmoles	26825
	250 nmole	25 nmoles	38425
	1 µmole	50 nmoles	56550

PRIMETIME™ DUAL-LABELED DNA PROBES

Reporter: 5' TET™

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® FQ	100 nmole	10 nmoles	23200
	250 nmole	25 nmoles	31500
	1 µmole	50 nmoles	47600
3' Black Hole Quencher® 1	100 nmole	10 nmoles	26825
	250 nmole	25 nmoles	38425
	1 µmole	50 nmoles	56550
3' Black Hole Quencher® 2	100 nmole	10 nmoles	26825
	250 nmole	25 nmoles	38425
	1 µmole	50 nmoles	56550

Reporter: 5' Cy3™

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® RQ-Sp	100 nmole	2 nmoles	24650
	250 nmole	8 nmoles	29000
	1 µmole	20 nmoles	48300
3' Black Hole Quencher® 2	100 nmole	2 nmoles	34075
	250 nmole	8 nmoles	39875
	1 µmole	20 nmoles	57400

Reporter: 5' Cy5™

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® RQ-Sp	100 nmole	2 nmoles	24650
	250 nmole	8 nmoles	29000
	1 µmole	20 nmoles	52200
3' Black Hole Quencher® 2	100 nmole	2 nmoles	34075
	250 nmole	8 nmoles	39875
	1 µmole	20 nmoles	59450

Reporter: 5' TEX™ 615

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® RQ-Sp	100 nmole	2 nmoles	24650
	250 nmole	8 nmoles	29000
	1 µmole	20 nmoles	52200
3' Black Hole Quencher® 2	100 nmole	2 nmoles	34075
	250 nmole	8 nmoles	39875
	1 µmole	20 nmoles	59450

PRIMETIME™ DUAL-LABELED DNA PROBES

Reporter: 5' JOE NHS Ester

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® FQ	250 nmole	8 nmoles	37700
	1 µmole	20 nmoles	56550
3' Black Hole Quencher® 1	250 nmole	8 nmoles	45675
	1 µmole	20 nmoles	68875
3' Black Hole Quencher® 2	250 nmole	8 nmoles	45675
	1 µmole	20 nmoles	68875

Reporter: 5' ROX NHS Ester

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® RQ-Sp	250 nmole	8 nmoles	37700
	1 µmole	20 nmoles	56550
3' Black Hole Quencher® 2	250 nmole	8 nmoles	45675
	1 µmole	20 nmoles	68875

Reporter: 5' TAMRA™ NHS Ester

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® RQ-Sp	250 nmole	8 nmoles	37700
	1 µmole	20 nmoles	56550
3' Black Hole Quencher® 2	250 nmole	8 nmoles	45675
	1 µmole	20 nmoles	68875

Reporter: 5' Texas Red®-X NHS Ester

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® RQ-Sp	250 nmole	8 nmoles	37700
	1 µmole	20 nmoles	56550
3' Black Hole Quencher® 2	250 nmole	8 nmoles	45675
	1 µmole	20 nmoles	68875

Reporter: 5' TYE™ 563

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® RQ-Sp	100 nmole	2 nmoles	24650
	250 nmole	8 nmoles	29000
	1 µmole	20 nmoles	52200
3' Black Hole Quencher® 2	100 nmole	2 nmoles	34075
	250 nmole	8 nmoles	39875
	1 µmole	20 nmoles	59450

Reporter: 5' TYE™ 665

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® RQ-Sp	100 nmole	2 nmoles	24650
	250 nmole	8 nmoles	29000
	1 µmole	20 nmoles	52500
3' Black Hole Quencher® 2	100 nmole	2 nmoles	34075
	250 nmole	8 nmoles	39875
	1 µmole	20 nmoles	59450

PRODUCTS

DUAL-LABELED LNA PROBES

Dual-Labeled LNA Probes

Locked Nucleic Acids (LNAs) can be incorporated into dual-labeled probes.^{1,2,3} Since LNA bases significantly increase T_m , LNA dual-labeled probes (DLPs) are shorter than standard DNA DLPs. Shorter probes have better quenching, a higher signal-to-noise ratio and are therefore more sensitive. More importantly, these probes offer an improved ability to distinguish mutations or single nucleotide polymorphisms (SNPs). A DNA DLP typically has a T_m of $\sim 5^\circ\text{C}$ between perfect match and mismatch hybridization. An LNA DLP can have a T_m of $> 15^\circ\text{C}$, greatly increasing accuracy of allele determination in real time PCR or other methods that use differential hybridization to distinguish polymorphism.

Depending on sequence context, insertion of an LNA base into a DNA oligo can increase the T_m by $3-6^\circ\text{C}$. IDT recommends 6 LNA bases be placed in an LNA DLP. LNA bases should be placed at the SNP site and adjacent bases. The SNP should be positioned in the center of the probe if possible. Additional LNA bases can be added towards the 3'-end of the probe to adjust T_m as needed. Note that relative binding affinity (T_m) of LNA bases are LNA: LNA > LNA:DNA > DNA:DNA. It is important to examine the probe sequence for self-dimer and hairpin formation and minimize designs that allow for LNA:LNA pairing.

Prices below include synthesis of the custom oligo (up to 25 bases in length), up to 6 LNA base insertions, reporter, quencher and HPLC Purification. Nanomole yields are listed for Dual-labeled LNA Probes 10 to 30 bases in length. Turnaround time for Dual-labeled LNA Probes is 4-6 business days.

Reporter 5'6-HEX

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black FQ *	Mini	0.5 nmoles	17,100

Reporter 5'6-FAM

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black FQ *	Mini	0.5 nmoles	17,100

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® FQ	250 nmole	8 nmoles	44850
	1 μmole	20 nmoles	63900
3' Black Hole Quencher® 1	250 nmole	8 nmoles	50400
	1 μmole	20 nmoles	70000

Reporter: 5' Cy3™

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® RQ-Sp	250 nmole	4 nmoles	50400
	1 μmole	10 nmoles	50400
3' Black Hole Quencher® 2	250 nmole	4 nmoles	55300
	1 μmole	10 nmoles	56000

Reporter: 5' Cy5™

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® RQ-Sp	250 nmole	4 nmoles	65100
	1 μmole	10 nmoles	71400
3' Black Hole Quencher® 2	250 nmole	4 nmoles	56700
	1 μmole	10 nmoles	79100

PRODUCTS

DUAL-LABELED LNA PROBES

Reporter: 5'TEX™ 615

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® RQ-Sp	250 nmole	4 nmoles	51100
	1 µmole	10 nmoles	51100
3' Black Hole Quencher® 2	250 nmole	4 nmoles	60750
	1 µmole	10 nmoles	96050

Reporter: 5'TYE™ 563

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® RQ-Sp	250 nmole	4 nmoles	49000
	1 µmole	10 nmoles	69300
3' Black Hole Quencher® 2	250 nmole	4 nmoles	54600
	1 µmole	10 nmoles	76300

Reporter: 5'TYE™ 665

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® RQ-Sp	250 nmole	4 nmoles	49000
	1 µmole	10 nmoles	69300
3' Black Hole Quencher® 2	250 nmole	4 nmoles	54600
	1 µmole	10 nmoles	76300

Reporter: 5' HEX™

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® FQ	250 nmole	8 nmoles	47600
	1 µmole	20 nmoles	65800
3' Black Hole Quencher® 1	250 nmole	8 nmoles	52500
	1 µmole	20 nmoles	72800

References

1. Evaluation of the performance of LNA and MGB probes in 5'-nuclease assays. Letertre, C., Perelle, S., Dilasser, F., Arar, K., and Fach, P. Molecular and Cellular Probes, 17:307-311 (2003).
2. Real-time genotyping with oligonucleotide probes containing locked nucleic acids. Ugozzoli, L.A., Latorra, D., Pucket, R., Arar, K., and Hamby, K. Analytical Biochemistry, 324:143-152 (2004)
3. Locked nucleic acid (LNA) single nucleotide polymorphism (SNP) genotype analysis and validation using real-time PCR. Johnson, M.P., Haupt, L.M., and Griffiths, L.R. Nucleic Acids Res., 32:e55 (2004).

PRODUCTS

FLUORESCENCE - BASED APPLICATIONS

Molecular Beacons

Molecular Beacons are a special class of dual-labeled probes having self-complementary ends that form a stem-loop structure (hairpin) in their native state. The hairpin forces the reporter and quencher into contact (dark). Upon hybridization to target, reporter and quencher are separated and the Molecular Beacon becomes bright. Because the hairpins in these probes result in enhanced specificity for their targets, Molecular Beacons are often better able to discriminate single nucleotide polymorphisms (SNPs) than simple linear probes.

Prices below include synthesis of a custom oligo (up to 45 bases in length), reporter, quencher, and HPLC purification.

Reporter: 5' 6-FAM™

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® FQ	250 nmole	10 nmoles	42700
	1 µmole	40 nmoles	63000
3' Black Hole Quencher® 1	250 nmole	10 nmoles	49700
	1 µmole	40 nmoles	72800
3' Dabcyl	250 nmole	10 nmoles	46200
	1 µmole	40 nmoles	67200

Reporter: 5' HEX™

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® FQ	250 nmole	10 nmoles	50400
	1 µmole	40 nmoles	72800

Reporter: 5' TET™

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® FQ	250 nmole	10 nmoles	52500
	1 µmole	40 nmoles	83300

Reporter: 5' TYE™ 563

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® RQ-Sp	250 nmole	5 nmoles	54600
	1 µmole	20 nmoles	79800

Reporter: 5' TYE™ 665

Quencher	Synthesis Scale	Minimum Guarantee	Price (Rs)
3' Iowa Black® RQ-Sp	250 nmole	5 nmoles	55300
	1 µmole	20 nmoles	81900

References

1. Thermodynamic basis of the enhanced specificity of structured DNA probes. Bonnet et al. Proc Natl Acad Sci USA 96: 6171-6176 (1999)

PRODUCTS

NEXT - GEN SEQUENCING

xGen™ Lockdown™ Probes beta

Scale (Yield/Probe)	Price per Probe	Minimum Order
Mini (2 pmole)	Inquire for Pricing	200 probes
Standard (20 pmole)	Inquire for Pricing	96 probes
XL (200 pmole)	Inquire for Pricing	96 probes

- Probes are individually assessed by mass spectrometry for QC
- All probes contain a 5' biotin modification
- Maximum of 2000 probes per pool

xGen Blocking Oligos Common Sets

Next generation sequencing platform adapter sequences are ligated to all library fragments, both on-target and off-target, before enrichment. These adapter sequences can hybridize with each other during enrichment, creating a "daisy-chain" effect in which off-target fragments are captured along with on-target fragments.

xGen™ Blocking Oligos bind to platform adapter sequences on a designated strand (usually the inverse of the synthetic adapter), preventing non-specific binding. HPLC purification of your blocking oligos can improve binding to adapter sequences. Introducing end-terminating modifications, such as a 3' C3 spacer, helps to inhibit spurious amplification of blocking oligos. Finally, when multiplexing large numbers of samples (>24 indexes), replacing the index sequence with mixed ("N") bases or deoxyinosine can provide significant cost savings and, in some situations, improved performance.

Product	Pricing	Length
10 nmole xGen™ Blocking Oligo	Inquire for Pricing	20 - 75 Bases
25 nmole xGen™ Blocking Oligo	Inquire for Pricing	20 - 75 Bases

GS FLX Titanium Rapid Library MID Adaptor Oligos

Titanium Rapid Library MID Oligos are intended for shotgun sequencing; the MID's are included in order to multiplex different samples on a single sequencing run.

GS FLX Titanium Rapid Library MID Adaptors Extended List

The GS FLX Titanium Rapid Library MID Adaptors Extended List includes a set of Adaptors that can be substituted for the Adaptors of the GS FLX Titanium Rapid Library Preparation Kit for the preparation of DNA libraries for sequencing on the Genome Sequencer FLX System. Tagging multiple libraries with different MID's allows them to be amplified and sequenced together in a single region of the PicoTiterPlate device. For customers that need more MID's than the twelve supplied by 454 in the GS FLX Titanium Rapid Library MID Adaptors Kit, this Extended List provides additional sequences that have been optimized for MID applications

Each MID sequence contains at least 4 changes (insertion, deletion, or substitution) to make it unique from the other members of the Extended MID Set. This means that, for any of these MID's, it is possible to either detect up to 2 errors and correct 1 error, or alternatively, detect 3 errors and correct none.

The Extended Set MID's are sorted according to the number of reagent flows needed to sequence each, with a lower number indicating fewer flows. As a result, the lower numbered entries of the Extended Set MID's are preferable to the higher numbered Adaptors because they can be sequenced using fewer reagent flows thereby maximizing the number of remaining flows for sequencing the library fragment.

PRODUCTS

xGen® Panel Product

xGen® Panel

NGS is a technology that has permeated through all fields of biology, and it allows researchers to characterize the genomes of virtually any organism. The challenge that most researchers face now is that, often times, you don't want an entire genome's worth of data. Sometimes you want to focus the raw power of next generation sequencing towards targeted segments of the genome so that you either process more samples or achieve a greater level of sensitivity.

This is where IDT steps in. Through xGen® Lockdown Probes, we enable customers to create custom gene enrichment panels that can be used over and over again to target specific, known segments of the genome. This product is used in process called Target Capture (or Hybrid Capture among other names). Lockdown Probes bind to target segments of the genome, and are pulled out of solution with streptavidin-coated magnetic beads.

xGen® Blocking Oligos help improve the performance Target Capture by binding to the adapters (adapters are known oligo sequences that are ligated on to random fragments that serve as a universal binding site. These adapters are partially complimentary to each other, which is why we need to "Block" them to improve performance).

Product Details:

xGen® Inherited Diseases Panel v1.0

The xGen® Inherited Diseases Panel consists of 116,355 individually synthesized and quality controlled xGen Lockdown® Probes to achieve targeted enrichment of 4,503 genes and 180 SNPs. The list is based on the HGMD® repository of known inherited disease-causing mutations and was further refined by the Emory Genetics Lab for clinical significance and relevance.

Additional Information

The latest series of products should help us accomplish a few things:

- Reducing upfront cost by supplying stocked panels** - Although Lockdown Probes are cost effective when used multiple times, they can often times require a very large upfront investment for some customers. We are launching a stocked panel that we believe will be popular amongst groups who are doing research or clinical work on patients with blood cancers.
- One Panel for Research or Clinical Labs for Detecting Inherited Disease** - Causing Mutations – the Inherited Diseases panel is based on the Human Gene Mutation Database (HGMD) of inherited diseases-causing mutations, and was further refined by Emory University for clinical relevance. Emory specifically will be using this single product to detect 50+ disorders. The list of diseases that this panel is meant to cover can be found here:
<http://genetics.emory.edu/egl/about/index.php/1583>

Product	Rxn	Prices (Rs.)
xGen® Inherited Diseases Panel v1.0	16 Rxn	3,56,250
	96 Rxn	20,52,000

xGen® Pan-Cancer Panel v1.0

The xGen® AML Cancer Panel v1.0 consists of 7,816 individually synthesized and quality controlled xGen Lockdown® Probes to achieve deep enrichment of 127 significantly mutated genes implicated across 12 tumor tissue types.

Additional Information

The latest series of products should help us accomplish a few things:

- Reducing upfront cost by supplying stocked panels** - Although Lockdown Probes are cost effective when used multiple times, they can often times require a very large upfront investment for some customers. We are launching a stocked panel that we believe will be popular amongst groups who are doing research or clinical work on patients with blood cancers.
- Enable researchers to more cost-effectively create tumor-specific panels** – The Pan-Cancer is a shortlist of genes that are implicated across 12 tumor types based on empirically derived data from The Cancer Genome Atlas (TCGA) research network. This base can be expanded upon via custom xGen Lockdown Probes.

Product	Rxn	Prices (Rs.)
xGen® Pan-Cancer Panel v1.0	16 Rxn	3,56,250
	96 Rxn	20,52,000
xGen® AML Cancer Panel v1.0	16 Rxn	3,56,250
	96 Rxn	12,11,250

PRODUCTS

BUFFERS, WATER AND MARKERS

Nuclease-free Buffers and Reagents

While many researchers continue to store oligonucleotides in water, resuspension in a buffered solution such as TE is recommended. DNA oligonucleotides can be damaged by prolonged incubation or storage in even mildly acidic solutions; DNA dissolved in distilled water will often have a final pH < 5.0 and is at risk for depurination. RNA will degrade in alkaline conditions. Further, single-stranded nucleic acids can easily be degraded by trace contamination with a variety of nucleases that are common contaminants in a normal laboratory environment. Any solution used to resuspend and store DNA or RNA should be nuclease-free. It is recommended that stock oligo solutions be made at high concentration and stored frozen. More dilute working solutions can be made from the stocks at intervals as needed.

The following solutions are for resuspension and dilution of oligos. Solutions are guaranteed to be nuclease-free. Each lot is tested using our RNaseAlert™ and DNaseAlert™ reagents to document the absence of any detectable nuclease activity. Water is DEPC-Free. Individual lots are screened for endotoxins using a Limulus Abocyte Lysate (LAL) assay.

IDTE (10 mM Tris, pH 7.5 or 8.0, 0.1 mM EDTA)

A 1x TE buffer for initial resuspension and storage of DNA oligos

Description	Price (Rs)
1 Liter IDTE pH 7.5 (1XTE Solution)	4450
1 Liter IDTE pH 8.0 (1XTE Solution)	4450
10 x 2 ml IDTE pH 7.5 (1XTE Solution)	2600
10 x 2 ml IDTE pH 8.0 (1XTE Solution)	2600
300 ml IDTE pH 7.5 (1XTE Solution)	2600
300 ml IDTE pH 8.0 (1XTE Solution)	2600
4 x 1 Liter IDTE pH 7.5 (1XTE Solution)	13500
4 x 1 Liter IDTE pH 8.0 (1XTE Solution)	13500

Nuclease Decontamination Solution

Many RNases and DNases are naturally found in the environment. Further, a variety of nucleases are employed in routine molecular biology methods and can accidmage to projects that require manipulations of intact RNA samples, such as functional genomics experiments, real-time quentally contaminate lab surfaces at very high levels. In particular, RNases can be very difficult to eliminate and can cause daantitative PCR, microarrays, etc.

Nuclease Decontamination Solution irreversibly inactivates nucleases and can be applied to most lab surfaces to remove nuclease contamination. Just spray, rinse and let dry. Nuclease Decontamination Solution eliminates the need to bake glassware and can be applied to plastic surfaces which are difficult to sterilize.

Nuclease Decontamination Solution

Description	Price (Rs)
250 mL Nuclease Decontamination Solution	5200
6 x 250 mL Nuclease Decontamination Solution	24000

Duplex Buffer (30 mM Hepes, pH 7.5, 100 mM Potassium Acetate)

For initial resuspension, annealing and storage of duplex RNAi products.

Description	Price (Rs)
1 Liter Nuclease Free Water	4000
10 x 2ml Nuclease Free Water	2300
300 ml Nuclease Free Water	2000
4 x 1 Liter Nuclease Free Water	13000

PRODUCTS

BUFFERS, WATER AND MARKERS

Nuclease-free Water (DEPC-Free)

For initial resuspension and storage of single-stranded RNA oligos. Also suitable for making dilute working solutions from stock oligos.

Description	Price (Rs)
10 x 2 ml Nuclease Free Duplex Buffer	2600
300 ml Nuclease Free Duplex Buffer	2600
1 Liter Nuclease Free Duplex Buffer	6000
4 x 1 Liter Nuclease Free Duplex Buffer	13500

Oligo length standards

Two oligonucleotide formulations for use as size/mass standards are available. Marker oligos have balanced base content, are purified and provided in equal mass amounts (10 µg of each oligo per tube) to normalize band intensity. (Note that the 10-mer binds dyes poorly and may appear more faint than the other bands.) Each tube contains enough marker for 25-100 loadings, depending on gel configuration and stain employed. Recommended loading mass varies with the precise stain used and dimensions of gel comb. For 1mm x 4-6mm comb dimensions, 0.1-0.2 µg/lane is recommended if using SybrGold™ stain (Molecular Probes). 0.2-0.4 µg/lane is recommended if using GelStar™ (Cambrex). For non-fluorescent stains such as Stains-All™ (Sigma-Aldrich), use 0.3-0.4 µg/lane. Ethidium Bromide staining works poorly with single-stranded nucleic acid and is not recommended.

10/60 Ladder

10, 15, 20, 25, 30, 40, 50, 60 base marker oligos

20/100 Ladder

20, 30, 40, 50, 60, 70, 80, 90, 100 base marker oligos

Description	Price (Rs)
10/60 Ladder	11000
20/100 Ladder	11000

Resuspension and Use Guidelines

Resuspend the lyophilized oligo mixture in 100 µl of TE buffer (10 mM Tris pH 7.5, 0.1 mM EDTA) to obtain a concentration of 0.1 µg/µl (of each oligo). Mix the desired amount of marker solution (1-4 µl) with an equal volume of a formamide or urea-based loading buffer. Heat samples at 95°C for 3 minutes, cool on ice, load.

PRODUCTS

NUCLEASE CONTROL

RNaseAlert™ Substrate and Nuclease Detection System

Single-stranded RNases are ubiquitous, hard to eliminate and can rapidly degrade important samples used in microarray studies, real-time PCR, Northern blots or cDNA cloning. IDT has developed reagents that allow for rapid, sensitive detection of RNases and DNases (click here for DNaseAlert™). These reagents are fluorescence-quenched oligonucleotide probes that emit a fluorescent signal only after nuclease degradation. The assay can be read visually or measured and quantified using fluorometry. Assays can be used qualitatively to test lab reagents, equipment and supplies for nuclease contamination. Assays can also be used quantitatively to study enzyme kinetics.

The RNaseAlert™ substrate employs a FAM™ (fluorescein) reporter (Em 520 nm) and a dark quencher. The RNA sequence has been carefully optimized to react with a wide variety of ribonucleases. Intact, the substrate has little or no fluorescence. When cleaved by an RNase, the substrate fluoresces green (490 nm or UV excitation, 520 nm emission).

RNaseAlert™ is available in single-use tubes which are ideal for rapid hand-held visual assays at the research bench, or as bulk substrate which can be used in either visual assays or read in a fluorometer. RNaseAlert™ is also available as a kit that provides 25 single-use tubes of the RNaseAlert™ Substrate. The kit also includes a buffer optimized for detection of a wide variety of RNases, nuclease free water, RNase A (for use as a positive control), and 50 ml of Nuclease Decontamination Solution (to clean lab surfaces found to have nuclease contamination).

RNaseAlert™ Kit Components:

25 50 pmole Fluorescent Substrate tubes

250 µl RNaseAlert™ Buffer

2 ml Nuclease-Free water

50 µl RNase A

50 ml Nuclease Decontamination Solution

Kit quality guaranteed for six months from date received when stored at -20°C

Description	Price (Rs)
RNaseAlert™ Substrate - 2 bulk tubes	40658
RNaseAlert™ Kit	18000

DNaseAlert™ Substrate and Nuclease Detection System

Nucleases are widely present in the laboratory environment and can interfere with many experiments. IDT has developed reagents that allow for rapid, sensitive detection of RNases and DNases. These reagents are fluorescence-quenched oligonucleotide probes that emit a fluorescent signal only after nuclease degradation. The assay can be read visually or measured and quantified using fluorometry. Assays can be used qualitatively to test lab reagents, equipment and supplies for nuclease contamination. Assays can also be used quantitatively to study enzyme kinetics.

The DNaseAlert™ Substrate is a synthetic DNA oligonucleotide that has a HEX™ reporter dye (hexachlorofluorescein) on one end and a dark quencher on the other end. The DNA sequence has been carefully optimized to react with a wide variety of nucleases; it contains domains that will react with single-stranded endonucleases, certain single-stranded exonucleases, and double-stranded nucleases. Intact the substrate has little or no fluorescence. When cleaved by a DNase, the substrate fluoresces pink (536 nm or UV excitation, 556 nm emission) and can be detected visually or using a fluorometer.

DNaseAlert™ is available in single-use tubes which are ideal for rapid hand-held visual assays at the research bench, or as bulk substrate which can be used in either visual assays or read in a fluorometer. DNaseAlert™ is also available as a kit that provides 25 single-use tubes of the DNaseAlert™ Substrate. The kit also includes a buffer optimized for detection of a wide variety of DNases, nuclease-free water, DNase 1 Enzyme (for use as a positive control), and 50 ml of Nuclease Decontamination Solution (to clean lab surfaces found to have nuclease contamination).

DNaseAlert™ Kit Components:

25 50 pmole Fluorescent Substrate tubes

250 µl DNaseAlert™ Buffer

2 ml Nuclease-Free water

25 µl 2U/ml DNase 1 Enzyme

50 ml Nuclease Decontamination Solution

Kit quality guaranteed for six months from date received when stored at -20°C.

DNaseAlert™ Substrate and Nuclease Detection System

Description	Price (Rs)
DNaseAlert™ Kit	15000
DNaseAlert™ Substrate - 2 bulk tubes	33670

MADE PRIMERS AND PRODUCTS

ReadyMade™ Primers

ReadyMade™ Primers are prestocked oligonucleotides for sample preparation, sequencing, and gene expression analysis of common genes.

- Each primer is > 95% pure to insure optimum performance.
- Identity is confirmed by Mass Spectrometry
- Purity is established by Capillary Electrophoresis
- 10 µg of purified product
- Enough for 100 sequencing reactions

ReadyMade™ Primer Name	Sequence	Tm	Anhyd. Mol. Wgt.	pmoles in 10 µgs	Price (Rs.)
16S rRNA For	AGA GTT TGA TCCTGG CTC AG	55.2	6148	1626.7	1600
16S rRNA Rev	ACG GCT ACC TTG TTA CGA CTT	57.4	6372.2	1569.4	1600
3' RACE PCR	GGC CAC GCG TCG ACT AGT AC	60.6	6103	1638.5	1600
Anchored OligodT (20)	TTTTTTTTTTTTTTTTTTTTTV	39.2	6028.3	1658.7	1600
Anchored OligodT (22)	TTTTTTTTTTTTTTTTTTTTTVN	42.8	6641.4	1505.7	1600
BGH Reverse	TAG AAG GCA CAG TCG AGG	54	5597.7	1786.4	1600
Bluescript KS	TCG AGG TCG ACG GTA TC	53.3	5226.4	1913.4	1600
Bluescript SK	CGC TCT AGA ACT AGT GGATC	52.4	6117	1634.8	1600
cDNA Cloning Primer	GGCCACGCGTCGACTAGTACTTTTTTTTTTTTTTTTV	64.8	11584.9	863.1	1600
EGFP-C	CATGGT CCT GCT GGA GTT CGT G	61.2	6773.4	1476.3	1600
EGFP-N	CGT CGC CGT CCA GCT CGA CCA G	67.2	6657.3	1502.1	1600
GAPDH For	ACC ACA GTC CAT GCC ATC AC	58.6	5991	1669.3	1600
GAPDH Rev	TCC ACC ACC CTG TTG CTG TA	59.7	6003.9	1665.7	1600
M13 Forward (-20)	GTA AAA CGA CGG CCA GT	53	5228.5	1912.6	1600
M13 Forward (-41)	CGC CAG GGT TTT CCC AGT CAC GAC	65.5	7289.8	1371.7	1600
M13 Reverse (-27)	CAG GAA ACA GCT ATG AC	47.3	5212.5	1918.3	1600
M13 Reverse (-48)	AGC GGA TAA CAATTT CAC ACA GG	57.2	7065.7	1415.2	1600
Neomycin For	CTT GGG TGG AGA GGCTATTC	55.6	6204.1	1612	1600
Neomycin Rev	AGGTGA GAT GAC AGG AGATC	54	6255.1	1598.7	1600
OligodT, 15mer	TTTTTTTTTTTTTTT	29.7	4501	2221.7	1600
OligodT, 16mer	TTTTTTTTTTTTTTTTT	32.1	4805.2	2081	1600
OligodT, 18mer	TTTTTTTTTTTTTTTTT	36	5413.6	1847.3	1600
OligodT, 20mer	TTTTTTTTTTTTTTTTT	39.1	6022	1660.6	1600
OligodT, 20mer w/ 5' Phos	/5Phos/TTTTTTTTTTTTTTTTT	39.1	6101.9	1638.8	1600
PCMV Forward	CGC AAATGG GCG GTA GGC GTG	64.8	6552.3	1526.2	1600
pET 3'	CTAGTT ATT GCT CAG CGG	50.6	5505.6	1816.2	1600
pET 5' (T7)	TAATAC GACTCA CTATAG G	45.3	5795.8	1725.3	1600
pET Upstream	ATG CGT CCG GCG TAG A	56.7	4922.2	2031.4	1600

READY MADE PRIMERS AND PRODUCTS

ReadyMade™ Primer Name	Sequence	Tm	Anhyd. Mol. Wgt.	pmoles in 10 µgs	Price (Rs.)
pGEX 3'	CCG GGA GCT GCA TGT GTC AGA GG	65.2	7145.7	1399.3	1600
pGEX 5'	GGG CTG GCA AGC CAC GTT TGG TG	67	7136.6	1401.1	1600
Random Hexamer	NNN NNN	<10	1791.7	5581.3	1600
Random Hexamer w/ Biotin	/5Bio/NNN NNN	<10	2198.2	4549.3	1600
SP6 Promoter	TAC GAT TTA GGT GAC ACT ATAG	50	6773.5	1476.2	1600
SP6 Upstream	ATT TAG GTG ACA CTA TAG	42.8	5537.7	1805.8	1600
T3 Promoter	AAT TAA CCC TCA CTA AAG GG	50.4	6094	1640.9	1600
T7 Promoter	TAATAC GACTCA CTATAG GG	48.3	6125	1632.5	1600
T7 Terminator	GCT AGT TAT TGCTCA GCG G	54.1	5834.8	1713.8	1600

ReadyMade™ Randomers

Randomers are oligonucleotides composed of all possible sequences for a given length. These random sequence oligonucleotides can be used to detect single nucleotide polymorphisms (SNPs) as well as small scale chromosome events, primarily insertions or deletions. They can also be used for comparative genomic hybridization (CGH) to elucidate genome-wide sequence copy-number variation (CNV). These applications require oligonucleotides that have consistent base composition and minimal lot-to-lot variation.

Actual base composition of IDT ReadyMadeRandomers is tested by enzymatic degradation and HPLC. ReadyMadeRandomers are delivered dried down.

Description	Price (Rs.)
10 nm Random Hexamer	2660
50 nm Random Hexamer	10500
500 nm Random Hexamer	92400
10 nm 5' Biotinylated Random Hexamer	2940
50 nm 5' Biotinylated Random Hexamer	11900
500 nm 5' Biotinylated Random Hexamer	81900

PURIFICATION GUIDE FOR MODIFIED OLIGOS

Name		Purification Recommendations	Allow PAGE
/32FA/	3' 2'-Fluoro A	Requires HPLC Purification	
/32FC/	3' 2'-Fluoro C	Requires HPLC Purification	
/32FG/	3' 2'-Fluoro G	Requires HPLC Purification	
/32FU/	3' 2'-Fluoro U	Requires HPLC Purification	
/3AmdA/	3' 2,6-Diaminopurine	Requires HPLC Purification	
/32AmPu/	3' 2-Aminopurine		
/3Me-dC/	3' 5-Me dC		✓
/35NitInd/	3' 5-Nitroindole		✓
/35OctdU/	3' 5-Octadiynyl dU		✓
/36-FAM/	3' 6-FAM™		
/3AlexF488N/	3' Alexa Fluor® 488 (NHS Ester)	Requires HPLC Purification	
/3AlexF532N/	3' Alexa Fluor® 532 (NHS Ester)	Requires HPLC Purification	
/3AlexF546N/	3' Alexa Fluor® 546 (NHS Ester)	Requires HPLC Purification	
/3AlexF594N/	3' Alexa Fluor® 594 (NHS Ester)	Requires HPLC Purification	
/3AlexF647N/	3' Alexa Fluor® 647 (NHS Ester)	Requires HPLC Purification	
/3AlexF660N/	3' Alexa Fluor® 660 (NHS Ester)	Requires HPLC Purification	
/3AlexF750N/	3' Alexa Fluor® 750 (NHS Ester)	Requires HPLC Purification	
/3AmMO/	3' Amino Modifier		
/3AmMC6T/	3' Amino Modifier C6 dT		
/3AzideN/	3' Azide (NHS Ester)	Requires HPLC Purification	
/3Bio/	3' Biotin		
/3BiodT/	3' Biotin dT	Requires HPLC Purification	
/3BioTEG/	3' Biotin-TEG		
/3BHQ_1/	3' Black Hole Quencher® 1	Requires HPLC Purification	
/3BHQ_2/	3' Black Hole Quencher® 2	Requires HPLC Purification	
/3SpC3/	3' C3 Spacer		✓
/3ChoITEG/	3' Cholesterol-TEG	Requires HPLC Purification	
/3Cy3Sp/	3' Cy3™-Sp	Requires HPLC Purification	
/3Cy55Sp/	3' Cy5.5™-Sp	Requires HPLC Purification	
/3Cy5Sp/	3' Cy5™-Sp	Requires HPLC Purification	
/3Dab/	3' DabcyI	Requires HPLC Purification	
/3deoxyl/	3' deoxyInosine		✓
/3deoxyU/	3' deoxyUridine		✓
/3ddC/	3' Dideoxy-C		✓
/3Dig_N/	3' Digoxigenin (NHS Ester)	Requires HPLC Purification	
/3DTPA/	3' Dithiol	Requires HPLC Purification	
/3dSp/	3' dSpacer		✓
/3FluorT/	3' Fluorescein dT	Requires HPLC Purification	

PURIFICATION GUIDE FOR MODIFIED OLIGOS

Name		Purification Recommendations	Allow PAGE
/3C6/	3' Hexanediol		
/3InvdT/	3' Inverted dT		✓
/3IABkFQ/	3' Iowa Black® FQ	Requires HPLC Purification	
/3IABRQSp/	3' Iowa Black® RQ-Sp	Requires HPLC Purification	
/3Joe_N/	3' JOE (NHS Ester)	Requires HPLC Purification	
/3LtCy640N/	3' LightCycler® 640 (NHS Ester)		
/3MAX_N/	3' MAX (NHS Ester)	Requires HPLC Purification	
3Phos/	3' Phosphorylation		✓
/3RhodGn-XN/	3' Rhodamine Green™ -X (NHS Ester)	Requires HPLC Purification	
/3RhodRd-XN/	3' RhodamineRed™ -X (NHS Ester)	Requires HPLC Purification	
/3Sp18/	3' Spacer 18		✓
/3Sp9/	3' Spacer 9		✓
/36-TAMTSp/	3' TAMRA (NHS Ester)-Sp	Requires HPLC Purification	
/36-TAMSp/	3' TAMRA™ -Sp	Requires HPLC Purification	
/3TEX615/	3' TEX 615	Requires HPLC Purification	
/3TxRed-XN/	3' Texas Red® -X (NHS Ester)	Requires HPLC Purification	
/3ThioMC3-D/	3' Thiol Modifier C3 S-S		
/3TYE563/	3' TYE™ 563	Requires HPLC Purification	
/3TYE665/	3' TYE™ 665	Requires HPLC Purification	
/52FA/	5' 2'-Fluoro A	Requires HPLC Purification	
/52FC/	5' 2'-Fluoro C	Requires HPLC Purification	
/52FG/	5' 2'-Fluoro G	Requires HPLC Purification	
/52FU/	5' 2'-Fluoro U	Requires HPLC Purification	
/5AmdA/	5' 2,6-Diaminopurine	Requires HPLC Purification	
/52AmPr/	5' 2-Aminopurine		
/55Br-dU/	5' 5-Bromo dU	Requires HPLC Purification	
/5Me-dC/	5' 5-Methyl dC		✓
/55NitInd/	5' 5-Nitroindole		✓
/55OctdU/	5' 5-Octadiynyl dU		✓
/55-TAMK/	5' 5-TAMRA™ (Azide)	Requires HPLC Purification	
/56-FAM/	5' 6-FAM™		
/56-FAMK/	5' 6-FAM™ (Azide)	Requires HPLC Purification	
/5Acryd/	5' Acrydite™		
/5Alex488N/	5' Alexa Fluor® 488 (NHS Ester)	Requires HPLC Purification	
/5Alex532N/	5' Alexa Fluor® 532 (NHS Ester)	Requires HPLC Purification	
/5Alex546N/	5' Alexa Fluor® 546 (NHS Ester)	Requires HPLC Purification	
/5Alex594N/	5' Alexa Fluor® 594 (NHS Ester)	Requires HPLC Purification	
/5Alex647N/	5' Alexa Fluor® 647 (NHS Ester)	Requires HPLC Purification	

PURIFICATION GUIDE FOR MODIFIED OLIGOS

Name		Purification Recommendations	Allow PAGE
/5Alex660N/	5' Alexa Fluor® 660 (NHS Ester)	Requires HPLC Purification	
/5Alex750N/	5' Alexa Fluor® 750 (NHS Ester)	Requires HPLC Purification	
/5AmMC12/	5' Amino Modifier C12		
/5AmMC6/	5' Amino Modifier C6		
/5AmMC6T/	5' Amino Modifier C6 dT		
/5AzideN/	5' Azide (NHS Ester)	Requires HPLC Purification	
/5Biosg/	5' Biotin		
/5BioK/	5' Biotin (Azide)	Requires HPLC Purification	
/5BiodT/	5' Biotin dT	Requires HPLC Purification	
/5BioTEG/	5' Biotin-TEG	Requires HPLC Purification	
/5SpC3/	5' C3 Spacer		
/5Cy3/	5' Cy3™	Requires HPLC Purification	
/5Cy55/	5' Cy5.5™	Requires HPLC Purification	
/5Cy5/	5' Cy5™	Requires HPLC Purification	
/5deoxyl/	5' deoxyInosine		✓
/5deoxyU/	5' deoxyUridine		✓
/5DigN/	5' Digoxigenin (NHS Ester)	Requires HPLC Purification	
/5DTPA/	5' Dithiol	Requires HPLC Purification	
/5dSp/	5' dSpacer		✓
/52-Bio/	5' Dual Biotin	Requires HPLC Purification	
/5Dy750N/	5' Dy 750 (NHS Ester)	Requires HPLC Purification	
/5FluorT/	5' Fluorescein dT	Requires HPLC Purification	
/5HEX/	5' HEX™		
/5Hexynyl/	5' Hexynyl		✓
/5ILink12/	5' I-Linker 1.2		
/5IAbFQ/	5' Iowa Black® FQ	Requires HPLC Purification	
/5IAbRQ/	5' Iowa Black® RQ	Requires HPLC Purification	
/5IRD700/	5' IRDye® 700	Requires HPLC Purification	
/5IRD800/	5' IRDye® 800	Requires HPLC Purification	
/5IRD800CWN/	5' IRDye® 800CW (NHS Ester)	Requires HPLC Purification	
/5Me-isodC/	5' isodC	Requires HPLC Purification	
/5isodG/	5' isodG	Requires HPLC Purification	
/56-JOEN/	5' JOE (NHS Ester)	Requires HPLC Purification	
/5LtC640N/	5' LightCycler 640 (NHS Ester)	Requires HPLC Purification	
/5MAXN/	5' MAX (NHS Ester)	Requires HPLC Purification	
/5PCBio/	5' PC Biotin	Requires HPLC Purification	
/5SpPC/	5' PC Spacer	Requires HPLC Purification	
/5Phos/	5' Phosphorylation		✓

PURIFICATION GUIDE FOR MODIFIED OLIGOS

Name		Purification Recommendations	Allow PAGE
/5RhoG-XN/	5' Rhodamine Green™-X (NHS Ester)	Requires HPLC Purification	
/5RhoR-XN/	5' RhodamineRed™-X (NHS Ester)	Requires HPLC Purification	
/56-ROXN/	5' ROX™ (NHS Ester)	Requires HPLC Purification	
/5Sp18/	5' Spacer 18		✓
/5Sp9/	5' Spacer 9		✓
/56-TAMN/	5' TAMRA™ (NHS Ester)	Requires HPLC Purification	
/5TET/	5' TET™		
/5TEX615/	5' TEX 615	Requires HPLC Purification	
/5TexRd-XN/	5' Texas Red®-X (NHS Ester)	Requires HPLC Purification	
/5ThioMC6-D/	5' Thiol Modifier C6 S-S		
/5TYE563/	5' TYE™ 563	Requires HPLC Purification	
/5TYE665/	5' TYE™ 665	Requires HPLC Purification	
/5TYE705/	5' TYE™ 705	Requires HPLC Purification	
/5UniAmM/	5' Uni-Link™ Amino Modifier		
/i2FA/	Int 2'-Fluoro A	Requires HPLC Purification	
/i2FC/	Int 2'-Fluoro C	Requires HPLC Purification	
/i2FG/	Int 2'-Fluoro G	Requires HPLC Purification	

PRODUCTS

STANDARD MIXED BASES INSTRUCTIONS

Mixed bases, which are also known as degenerate or wobble bases, can be introduced at any position in an oligomer sequence. For example, mixed base composition at a single position can include all 4 bases ("N"), C or T bases ("Y"), A or G bases ("R"), etc. Since there are 11 different possible combinations of 2,3 or 4 bases, a universal nomenclature has been established that must be used when specifying nucleic acid content as a mixed base site.

IUB Codes for Mixed Bases	
R	A,G
Y	C,T
M	A,C
K	G,T
S	C,G
W	A,T
H	A,C,T
B	C,G,T
V	A,C,G
D	A,G,T
N	A,C,G,T

PRODUCTS ABOUT IDT

The source for custom oligo synthesis

Integrated DNA Technologies (IDT) is the largest supplier of custom nucleic acids, manufacturing DNA and RNA oligos and serving the areas of academic research, biotechnology, and pharmaceutical development. IDT products support applications including DNA sequencing, DNA amplification, expression profiling, microarray analysis, SNP detection, gene quantification, and functional genomics. IDT is unique in its ability to accommodate even the largest orders without compromising quality.

IDT's development has been guided by an uncompromising approach to quality, a belief in the value of good service and a determination to minimize consumer costs. IDT serves its worldwide customer base from facilities in Coralville, Iowa; San Diego, California and Leuven, Belgium. IDT's Iowa and California locations are both ISO 9001:2000 certified and its Clinical and Commercial Manufacturing suite achieved ISO 13485:2003 certification.

IDT prides itself on quality

- All oligos quantitated twice by UV Spectrophotometry
- All oligos are QC tested by mass spectrometry
- IDT employs MALDI MS for high-throughput QC of oligos 10-45 bases
- Advanced ESI MS QC is used for modified and long oligos up to 135 bases
- A proprietary LC-MS electrospray method is used to provide accurate mass assessment up to 200 bases
- All purified oligos are analyzed by capillary electrophoresis or HPLC
- Each oligo is provided with a spec sheet that lists the sequence name, sequence, modifications, purification, molecular weight, GC content, T_m, extinction coefficient, secondary structure calculations, OD₂₆₀, milligram and nanomole yield
- Custom analytical services are available

IDT World Headquarters, Coralville, IA USA

The IDT Advantage

- **Quality guaranteed**
If any oligo does not meet IDT's strict quality standards, it will be re-synthesized at no charge and notification provided directly.
- **Convenient ordering**
Sophisticated, confidential online ordering with several secure payment methods.
- **Automated order confirmation system**
Order and shipment confirmations are sent automatically via email. Detailed information on each order's progress is available online.
- **Extended Customer Care**
See www.idtdna.com for information on how to contact IDT's professional Customer Care and Technical Support representatives.
- **Experienced technical support**
IDT's staff includes Ph.D-level experts in synthetic chemistry, oligo design, sequencing, PCR, RNAi, gene synthesis and related research applications.
- **Free online design and analysis tools**
Go to www.idtdna.com to access IDT's extensive suite of free online design and analysis tools including PrimerQuest, RNAi and miRNA design, T_m analysis and a resuspension calculator.
- **Online account features**
Track shipments, access QC documents and invoices, view order history information and reorder products easily.
- **Ordering in India**
Place your orders online at idt.primers@avantormaterials.com.



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