

BioneerHealthier Future for
Humanity with
Genomic Technology

Oligonucleotide Synthesis

Individual needs, high throughput or bulk quantities, Bioneer has your oligo bases covered.

- **Free Bio-RP purification**
- **Near HPLC purity**
- **100% guaranteed performance for your application, or we'll make it again**

Bioneer, founded in 1992, is one of the world's leading suppliers of synthetic oligonucleotides (DNA and RNA). In-house production of raw materials (phosphoramidites, reagents & solvents) along with automated synthesis and purification systems result in superior quality oligo at great price. Since Bioneer manufactures all the components of our oligo, we manage the quality control every step of the way—ensuring that you receive only the highest quality product. Every Bioneer oligo is purified free of charge utilizing our unique Bio-RP cartridge purification technology (a \$15 value).

Bio-RP removes many impurities and synthesis failure products that are still present in an oligo after desalting*. These impurities contribute to the OD measurement of competitor that are merely desalted and artificially inflate their yield (see below). The end result of Bioneer's Bio-RP cartridge purification is near HPLC quality purification with only full-length product. We are so confident in our oligo that we are only company to offer a 100% guarantee that they will work for your PCR or qPCR application!

With high throughput oligo synthesis facilities around the world, Bioneer's daily capacity is unsurpassed. Bioneer is unrivalled in its ability to address the needs of customers requiring a few oligos on a regular basis and those customers that require very large numbers of oligos on a less frequent basis. We respond to your needs personally.

Did you know?

Oligo desalting vs Bio-RP™ Purification:

Most oligos sold are merely deprotected/desalted. The process of deprotection/desalting only partially purifies the oligo and leaves behind many impurities* and failure products (truncated oligos that will not amplify, and can even interfere with certain applications). These can lead to artificially inflated OD readings that increase with oligo length. Bio-RP purification removes all these contaminants and failure products, resulting in an oligo that is near HPLC purity. The advantage to you is that our product contains only quality oligo without impurities that can inhibit some PCR reactions, and potentially skew qPCR reactions. We have the same amount of active oligo as our competitors; they just have more "other" inflating their OD. To demonstrate this, plates of Oligos of various sizes were tested for concentration in 2 steps: 1) After a deprotection/desalting step only, and 2) after Bio-RP purification. (Fig. 1)

The results of these tests show that the amount of failed sequences and impurities* increase with length (as expected), but are not removed by deprotection/desalting alone. This results in inflated OD reading for oligos depending on oligo size. (Table 1)

*Impurities in desalted oligos may include: Acetonitrile, pyridine, iodine, ethylthiotetrazole, dichloromethane, acetic acid, acrylonitrile, benzamide and isobutyramide.

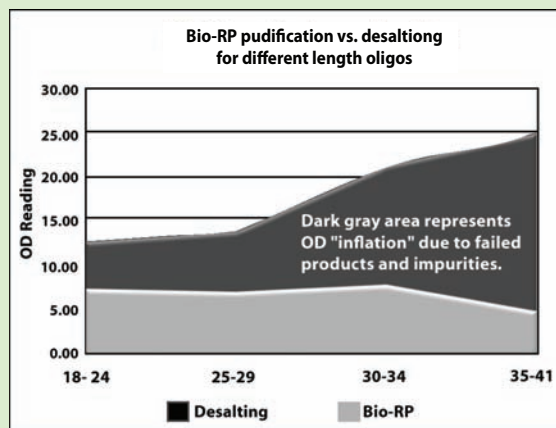


Fig 1. Plates of Oligos of various lengths were tested for concentration after desalting and then by Bio-RP cartridge purification. Note inflated OD readings when deprotection/desalting alone is used.

| Oligo Size | 18 - 24 | 24 - 29 | 30 - 34 | 35 - 41 |
|--------------|---------|---------|---------|---------|
| OD Inflation | 38% | 45% | 60% | 77% |

Table 1. Average OD inflation seen for oligos of various sizes when protection/desalting alone is employed.

Note for longer oligos, up to 77% of product does not consist of functional oligo.

What we offer-personal service! ●●●

Based on volume, modification and scale, Bioneer oligos can be classified as follows:

- **Standard Custom**
Based on volume, modification and scale, Bioneer oligos can be classified as follows:
- **Modified for qPCR and Other Applications**
Most common modifications are available and can be ordered in tubes or plates.
- **Purified**
All oligos are Bio-RP purified free-of-charge; HPLC and PAGE purification is also available.
- **Extendamers™ (Long oligomers)**
Oligos up to 200 mers can be synthesized with Bio-RP or PAGE purification.
- **Large Scale(Bulk)**
Milligram to tens of grams of oligos, including standard, modified and purified.
- **High Throughput**
Very large numbers of oligos supplied in 96- or 384-well plate format.
- **Stock/Pre-made Primers**
Stock primers pre-made, PAGE purified and available off-the-shelf from Bioneer.

Tell us what you need

Bioneer's production can accommodate orders ranging from milligrams to tens of grams of the purest DNA and RNA, including both standard and modified. Our lists of synthesis services are below, but if you need something else, please ask us!

| Synthesis Services | | |
|--------------------|--|--|
| Type | Scale | Base Limitation |
| Custom/Standard | 25 nmole 50 nmole 200 nmole 1 umole 10 umole 15 umole | 25 nmole: 15-60 mer 50 nmole: 10-75 mer 200 nmole: 5-110 mer 1 umole: 5-130 mer 10 umole: 5-50 mer 15 umole: 5-50 mer |
| High Throughput | 25 nmole 50 nmole 200 nmole 1 umole 10 umole 15 umole | |

So many Modifications... ●●●

All common Oligo modifications are available including those in the table. Our fluorogenic oligonucleotides for qPCR, are unsurpassed in quality, and priced for value. In addition to the modifications listed in our ordering information tab, we may be able to accommodate custom oligo modifications to fit your needs. Please contact oligo-support@bioneer.com for more information.

Available Modifications*

| Available Modifications* | | |
|--------------------------|------------------------------------|-------------------|
| Antisense | | |
| Chimeric RNA Bases | Chimeric RNA Bases (HPLC purified) | 2'-O-Me-RNA Bases |

What we offer - Purity above and beyond! ●●●

- **Purification options**
All oligos synthesized by Bioneer are purified using the Bio-RP purification system. This service is available free of charge on all oligos. We also offer HPLC purification and PAGE purification.
- **Features of Purification options**
Bio-RP-Free-of-charge on all scales:
 - Better than ethanol precipitation or Sephadex G-25 column chromatography.
 - Bio-RP not only desalts, but also removes virtually all of the failed products of synthesis.
 - Near HPLC quality.
- **HPLC(High Performance Liquid Chromatography) available on all scales, except 25 nmole**
 - For applications such as cloning, site-directed mutagenesis, or qPCR.
 - RP-HPLC purification for added purity.
 - >90% purification efficiency(range varies according to the length of oligos).
- **PAGE (Polyacrylamide Gel Electrophoresis) Available on all scales, except 25 nmole**
 - Recommended purification method for long oligos, up to 200 mer.
 - >95% purification efficiency.
 - Ultra-pure oligo, but lower yields than OPC and HPLC.

What we deliver - Value! ●●●

Free MALDI-TOF Quality Control

Bioneer is one of the few oligo producers that checks all oligonucleotides (single or high throughput orders) by MALDI-TOF and provides mass data with each oligo – free of charge. Oligos greater than 50 bases are also quality checked by gel electrophoresis.

Bioneer's Oligo Synthesis Report accompanies each oligo order. The contents of the Data Sheet include: Oligo Name, OD, total nmole, scale, length, purification, modification(s), GC content, molecular weight, and volume for 100 μ M solution.

Shipping Information and Turnaround Time

We know that time is of the essence and we always do our best to please. In our production process, quality is our first priority, followed very closely by time. We ship as soon as we are able and have 24 hour production.

| Turnaround Time | |
|--------------------------------|--|
| Service | Description of Service |
| Standard, non-modified, Bio-RP | Order by 5:00 PM PST (8:00 PM EST) any week day. Oligos are shipped lyophilized within 1 working days or sooner. |
| Standard, non-modified, HPLC | Order by 5:00 PM PST (8:00 PM EST) any week day. Oligos are shipped lyophilized within 3 working days or sooner. |
| Standard, non-modified, PAGE | Order by 5:00 PM PST (8:00 PM EST) any week day. Oligos are shipped lyophilized within 3 working days or sooner. |
| Standard, modified, Bio-RP | Order by 5:00 PM PST (8:00 PM EST) any week day. Oligos are shipped lyophilized within 2 working days or sooner. |
| Standard, modified, HPLC | Order by 5:00 PM PST (8:00 PM EST) any week day. Oligos are shipped lyophilized within 3 working days or sooner. |
| Standard, modified, PAGE | Order by 5:00 PM PST (8:00 PM EST) any week day. Oligos are shipped lyophilized within 3 working days or sooner. |
| High throughput, large scale | Please contact Customer Care for turnaround time. |

Extendamers, Synthesis and Purification

| Product Description | DNA Extender, BIO-RP | DNA Extender, PAGE |
|-------------------------|----------------------|--------------------|
| Cat. No. | S-2044 | S-2045 |
| Length Range | 130 - 200 bases | 130 - 200 bases |
| Guaranteed Yield | 3-4 nmole | 0.25 - 0.3 nmole |
| Turnaround Time | 5 - 6 days | 7 - 8 days |
| Base Price | \$ 0.95 | \$ 0.95 |
| Purification Price US\$ | Free | \$ 75.00 |

Modifications

| Product Description | 5' Phosphate | 5' Biotin | 5' Amine | 5' Fluorescein | 5' TAMRA | Inosine |
|---------------------|--------------|-----------|----------|----------------|-----------|---------|
| Price US\$ | \$ 25.00 | \$ 48.00 | \$ 25.00 | \$ 67.00 | \$ 150.00 | \$ 8.00 |

For additional modifications or pricing on modified oligos in plates, please email oligo-support@bioneer.com.

Ordering Information

| Cat. No. | Synthesis Scale | Base Limitation | Base Price | Bio-RP | PAGE | HPLC |
|---------------------|-----------------|-----------------|------------|--------|-----------|-----------|
| Tube format | | | | | | |
| S-1001 | 25 nmole | 15-60 mer | \$ 0.29 | Free | - | - |
| S-1010 | 50 nmole | 10-75 mer | \$ 0.47 | Free | \$ 40.00 | \$ 40.00 |
| S-1011 | 200 nmole | 5-110 mer | \$ 0.92 | Free | \$ 59.00 | \$ 59.00 |
| S-1012 | 1 umole | 5-130 mer | \$ 1.75 | Free | \$ 100.00 | \$ 100.00 |
| S-1013 | 10 umole | 5-50 mer | \$ 14.00 | Free | \$ 280.00 | \$ 280.00 |
| S-1014 | 15 umole | 5-50 mer | \$ 22.00 | Free | \$ 420.00 | \$ 420.00 |
| Plate format | | | | | | |
| H-1001 | 25 nmole | 15-60 mer | \$ 0.17 | Free | - | - |
| H-1010 | 50 nmole | 10-75 mer | \$ 0.21 | Free | \$ 25.00 | \$ 20.00 |
| H-1011 | 200 nmole | 5-110 mer | \$ 0.39 | Free | \$ 30.00 | \$ 25.00 |
| H-1012 | 1 umole | 5-130 mer | \$ 0.94 | Free | \$ 50.00 | \$ 50.00 |
| H-1013 | 10 umole | 5-50 mer | \$ 7.00 | Free | - | - |
| H-1014 | 15 umole | 5-50 mer | \$ 11.00 | Free | - | - |

| Modification | Synthesis Scale | | | |
|-----------------------------|-----------------|----------------|--------------|---------------------------------------|
| | 50 nmole (\$) | 200 nmole (\$) | 1 umole (\$) | 10 umole (\$) |
| 3'-Modification | | | | |
| DIG | 82.50 | 92.50 | 142.50 | 712.50 |
| C6 Amine | 15.00 | 30.00 | 47.00 | 235.00 |
| Phosphate | 22.00 | 30.00 | 45.00 | 240.00 |
| Biotin | 54.00 | 60.00 | 100.00 | 520.00 |
| C3 spacer | 36.00 | 45.00 | 66.00 | 280.00 |
| C6 spacer | 36.00 | 45.00 | 66.00 | 280.00 |
| C12 spacer | 36.00 | 45.00 | 66.00 | 280.00 |
| C18 atom spacer | 45.00 | 55.00 | 80.00 | 325.00 |
| dS spacer | 47.00 | 55.00 | 80.00 | 320.00 |
| FAM | 50.00 | 60.00 | 110.00 | 670.00 |
| TAMRA | 77.00 | 96.00 | 137.00 | 750.00 |
| Thiol | 70.00 | 90.00 | 130.00 | 690.00 |
| Texas Red | 165.00 | 185.00 | 285.00 | 1,425.00 |
| JOE | 165.00 | 185.00 | 285.00 | 1,425.00 |
| ROX | 1140.00 | 150.00 | 250.00 | 11,250.00 |
| Cy5 | 95.00 | 115.00 | 175.00 | 1,050.00 |
| Cy5.5 | 180.00 | 250.00 | 380.00 | 1,050.00 |
| Cy3 | 95.00 | 115.00 | 175.00 | 1,050.00 |
| Cy3.5 | 180.00 | 250.00 | 380.00 | 1,050.00 |
| Dabcyl | 80.00 | 100.00 | 200.00 | 1,050.00 |
| BHQ1 | 80.00 | 100.00 | 200.00 | 1,050.00 |
| BHQ2 | 80.00 | 100.00 | 200.00 | 1,050.00 |
| Cholesteryl | 80.00 | 100.00 | 240.00 | 1,200.00 |
| 3'-Inverted dT | 38.00 | 50.00 | 80.00 | 380.00 |
| 3'-Inverted dA | 38.00 | 50.00 | 80.00 | 380.00 |
| 3'-Inverted dC | 38.00 | 50.00 | 80.00 | 380.00 |
| 3'-Inverted dG | 38.00 | 50.00 | 80.00 | 380.00 |
| Ara-dC | 80.00 | 100.00 | 310.00 | Less than 3 (Set-up Charge: \$200.00) |
| 5-F-dU | 90.00 | 110.00 | 350.00 | Less than 3 (Set-up Charge: \$250.00) |
| 2',3'-ddC | 80.00 | 100.00 | 310.00 | Less than 3 (Set-up Charge: \$200.00) |
| AlexaFluor 488 | 180.00 | 200.00 | 350.00 | 1,750.00 |
| AlexaFluor 532 | 250.00 | 275.00 | 430.00 | 2,150.00 |
| AlexaFluor 546 | 250.00 | 275.00 | 430.00 | 2,150.00 |
| AlexaFluor 594 | 288.00 | 325.00 | 520.00 | 2,600.00 |
| AlexaFluor 647 | 180.00 | 200.00 | 350.00 | 1,750.00 |
| AlexaFluor 660 | 288.00 | 325.00 | 520.00 | 2,600.00 |
| AlexaFluor 750 | 288.00 | 325.00 | 520.00 | 2,600.00 |
| N6-methyl-2'-deoxyadenosine | 120.00 | 150.00 | 220.00 | Less than 3 (Set-up Charge: \$150.00) |
| DNP (2,4-dinitrophenyl)-TEG | 125.00 | 175.00 | 275.00 | Less than 3 (Set-up Charge: \$150.00) |
| Puromycin | 80.00 | 100.00 | 200.00 | 1,050.00 |
| Yakima Yellow | 120.00 | 150.00 | 220.00 | Inquire |
| 3'-dA | 250.00 | 275.00 | 350.00 | Inquire |
| 3'-dC | 250.00 | 275.00 | 350.00 | Inquire |
| 3'-dG | 250.00 | 275.00 | 350.00 | Inquire |
| 3'-dT | 250.00 | 275.00 | 350.00 | Inquire |
| 5-Nitroindole | 125.00 | 175.00 | 250.00 | 450.00 |

| Modifications | | | | |
|--------------------------------------|-----------------|----------------|--------------|---------------------------------------|
| Modification | Synthesis Scale | | | |
| | 50 nmole (\$) | 200 nmole (\$) | 1 umole (\$) | 10 umole (\$) |
| 3'-Modification | | | | |
| 2'-F-rA | 65.00 | 80.00 | 115.00 | Less than 3 (Set-up Charge: \$150.00) |
| 2'-F-rC | 65.00 | 80.00 | 115.00 | Less than 3 (Set-up Charge: \$150.00) |
| 2'-F-rG | 65.00 | 80.00 | 115.00 | Less than 3 (Set-up Charge: \$150.00) |
| 2'-F-rU | 65.00 | 80.00 | 115.00 | Less than 3 (Set-up Charge: \$150.00) |
| Maleimide | 50.00 | 65.00 | 95.00 | Less than 3 (Set-up Charge: \$150.00) |
| 2-Aminopurine | 75.00 | 90.00 | 125.00 | Less than 3 (Set-up Charge: \$150.00) |
| 2,6-Diaminopurine | 75.00 | 90.00 | 125.00 | Less than 3 (Set-up Charge: \$150.00) |
| Dithiol | 150.00 | 175.00 | 275.00 | 1,500.00 |
| EDTA-C2-dT | 120.00 | 150.00 | 275.00 | Less than 3 (Set-up Charge: \$250.00) |
| Thymidine Glycol | 150.00 | 175.00 | 275.00 | Less than 3 (Set-up Charge: \$150.00) |
| Zebularine | 65.00 | 80.00 | 115.00 | Less than 3 (Set-up Charge: \$150.00) |
| Methylene Blue | 150.00 | 175.00 | 275.00 | Less than 3 (Set-up Charge: \$250.00) |
| AMCA (amino-methyl-coumarin-acetate) | 125.00 | 175.00 | 275.00 | Less than 3 (Set-up Charge: \$175.00) |
| Deoxypurine (2'-DeoxyNebu larine) | 75.00 | 90.00 | 125.00 | Less than 3 (Set-up Charge: \$250.00) |
| PEG-2000 | inquire | inquire | inquire | inquire |
| Azide | 150.00 | 175.00 | 275.00 | 1,500.00 |
| Acrylamide (acrydite) | 90.00 | 110.00 | 350.00 | 1,500.00 |
| O6-Methyl 2'-dG | 75.00 | 90.00 | 125.00 | 375.00 |
| O4-Methyl-dT | 75.00 | 90.00 | 125.00 | 375.00 |
| dT-Alkyne | 225.00 | 250.00 | 350.00 | 1,750.00 |
| Rhodamine 6G | 180.00 | 250.00 | 380.00 | 1,050.00 |
| Epoch Eclips Quencher | 225.00 | 250.00 | 350.00 | 1,750.00 |
| EBQ | 112.00 | 135.00 | 350.00 | 594.00 |
| Pyrene-dU | 150.00 | 175.00 | 275.00 | 650.00 |
| Perylene-dU | 150.00 | 175.00 | 275.00 | 650.00 |
| C8-Alkyne-dT | 150.00 | 175.00 | 275.00 | 650.00 |
| C8-Alkyne-dC | 150.00 | 175.00 | 275.00 | 650.00 |
| Desthiobiotin TEG | 150.00 | 175.00 | 275.00 | 750.00 |
| N3-Methyl dC | 150.00 | 175.00 | 275.00 | 650.00 |
| N4-Ethyl dC | 150.00 | 175.00 | 275.00 | 650.00 |
| Marina blue | 125.00 | 175.00 | 250.00 | 1,250.00 |
| Azobenzene | 125.00 | 175.00 | 250.00 | 1,250.00 |

| Modifications | | | | |
|------------------------------------|-----------------|----------------|--------------|---------------------------------------|
| Modification | Synthesis Scale | | | |
| | 50 nmole (\$) | 200 nmole (\$) | 1 umole (\$) | 10 umole (\$) |
| 5'-Modification | | | | |
| DIG | 82.50 | 92.50 | 142.50 | 712.50 |
| C6 Amine | 10.00 | 25.00 | 40.00 | 190.00 |
| Phosphate | 10.00 | 25.00 | 40.00 | 180.00 |
| Biotin | 38.00 | 48.00 | 95.00 | 380.00 |
| Thiol | 70.00 | 90.00 | 130.00 | 690.00 |
| C3 spacer | 30.00 | 40.00 | 65.00 | 280.00 |
| C6 spacer | 30.00 | 40.00 | 65.00 | 280.00 |
| C12 spacer | 30.00 | 40.00 | 65.00 | 280.00 |
| 18 atom spacer | 47.00 | 55.00 | 80.00 | 320.00 |
| dS spacer | 47.00 | 55.00 | 80.00 | 320.00 |
| FAM | 56.00 | 67.00 | 142.00 | 565.00 |
| TAMRA | 140.00 | 150.00 | 250.00 | 975.00 |
| HEX | 55.00 | 66.00 | 138.00 | 600.00 |
| TET | 55.00 | 66.00 | 138.00 | 600.00 |
| Texas Red | 165.00 | 185.00 | 285.00 | 1,425.00 |
| JOE | 165.00 | 185.00 | 285.00 | 1,425.00 |
| ROX | 140.00 | 150.00 | 250.00 | 1,250.00 |
| Cy5 | 80.00 | 100.00 | 200.00 | 1,050.00 |
| Cy3 | 80.00 | 100.00 | 200.00 | 1,050.00 |
| IRD700 | 80.00 | 100.00 | 200.00 | 1,050.00 |
| IRD800 | 80.00 | 100.00 | 200.00 | 1,050.00 |
| C2 Aldehyde | 145.00 | 155.00 | 240.00 | 750.00 |
| Cy5.5 | 80.00 | 100.00 | 200.00 | 1,050.00 |
| Cholesteryl | 80.00 | 100.00 | 240.00 | 1,200.00 |
| Dabcyl | 145.00 | 175.00 | 240.00 | 1,200.00 |
| Ara-dC | 80.00 | 100.00 | 310.00 | Less than 3 (Set-up Charge: \$200.00) |
| 5-F-dU | 90.00 | 110.00 | 350.00 | Less than 3 (Set-up Charge: \$250.00) |
| 2',3'-ddA | 65.00 | 80.00 | 115.00 | Less than 3 (Set-up Charge: \$150.00) |
| 2',3'-ddC | 65.00 | 80.00 | 115.00 | Less than 3 (Set-up Charge: \$150.00) |
| 2',3'-ddG | 110.00 | 135.00 | 330.00 | Less than 3 (Set-up Charge: \$250.00) |
| 2',3'-ddT | 65.00 | 80.00 | 115.00 | Less than 3 (Set-up Charge: \$150.00) |
| AlexaFluor 488 | 180.00 | 200.00 | 350.00 | 1,750.00 |
| AlexaFluor 532 | 250.00 | 275.00 | 430.00 | 2,150.00 |
| AlexaFluor 546 | 250.00 | 275.00 | 430.00 | 2,150.00 |
| AlexaFluor 594 | 288.00 | 325.00 | 520.00 | 2,600.00 |
| AlexaFluor 647 | 180.00 | 200.00 | 350.00 | 1,750.00 |
| AlexaFluor 660 | 288.00 | 325.00 | 520.00 | 2,600.00 |
| AlexaFluor 750 | 288.00 | 325.00 | 520.00 | 2,600.00 |
| N6-methyl-2'-deoxyadenosine | 120.00 | 150.00 | 220.00 | Less than 3 (Set-up Charge: \$150.00) |
| PC (photo-cleavable) Amine Linker | 120.00 | 150.00 | 220.00 | Less than 3 (Set-up Charge: \$150.00) |
| PC (photo-cleavable) Biotin Linker | 120.00 | 150.00 | 220.00 | Less than 3 (Set-up Charge: \$150.00) |

| | | | | |
|--------------------------------------|---------|---------|---------|--------------------------------------|
| DNP (2,4-dinitrophenyl)-TEG | 125.00 | 175.00 | 275.00 | Less than 3 (Set-up Charge:\$150.00) |
| Cy3.5 | 180.00 | 250.00 | 380.00 | 1,050.00 |
| 3'-dA | 250.00 | 275.00 | 350.00 | Inquire |
| 3'-dC | 250.00 | 275.00 | 350.00 | Inquire |
| 3'-dG | 250.00 | 275.00 | 350.00 | Inquire |
| 3'-dT | 250.00 | 275.00 | 350.00 | Inquire |
| 5-Nitroindole | 125.00 | 175.00 | 250.00 | 450.00 |
| 2'-F-rA | 65.00 | 80.00 | 115.00 | Less than 3 (Set-up Charge:\$150.00) |
| 2'-F-rC | 65.00 | 80.00 | 115.00 | Less than 3 (Set-up Charge:\$150.00) |
| 2'-F-rG | 65.00 | 80.00 | 115.00 | Less than 3 (Set-up Charge:\$150.00) |
| 2'-F-rU | 65.00 | 80.00 | 115.00 | Less than 3 (Set-up Charge:\$150.00) |
| Maleimide | 50.00 | 65.00 | 95.00 | 350.00 |
| 2-Aminopurine | 75.00 | 90.00 | 125.00 | Less than 3 (Set-up Charge:\$150.00) |
| 2,6-Diaminopurine | 75.00 | 90.00 | 125.00 | Less than 3 (Set-up Charge:\$150.00) |
| Dithiol | 150.00 | 175.00 | 275.00 | 1,500.00 |
| BHQ2 | 180.00 | 220.00 | 330.00 | 900.00 |
| EDTA-C2-dT | 120.00 | 150.00 | 275.00 | Less than 3 (Set-up Charge:\$250.00) |
| Thymidine Glycol | 150.00 | 175.00 | 275.00 | Less than 3 (Set-up Charge:\$150.00) |
| Zebularine | 65.00 | 80.00 | 115.00 | Less than 3 (Set-up Charge:\$150.00) |
| Methylene Blue | 150.00 | 175.00 | 275.00 | Less than 3 (Set-up Charge:\$250.00) |
| AMCA (amino-methyl-coumarin-acetate) | 125.00 | 175.00 | 275.00 | Less than 3 (Set-up Charge:\$150.00) |
| Deoxypurine (2'-DeoxyNebularine) | 75.00 | 90.00 | 125.00 | Less than 3 (Set-up Charge:\$150.00) |
| PEG-2000 | inquire | inquire | inquire | inquire |
| 5'-BromoHexyl (Br) | 150.00 | 175.00 | 275.00 | 1,500.00 |
| Acridine | 125.00 | 175.00 | 275.00 | Less than 3 (Set-up Charge:\$150.00) |
| Acrylamide (acrydite) | 90.00 | 110.00 | 350.00 | 1,250.00 |
| Yakima Yellow | 250.00 | 275.00 | 350.00 | Less than 3 (Set-up Charge:\$150.00) |
| O6-Methyl 2'-dG | 75.00 | 90.00 | 125.00 | 375.00 |
| O4-Methyl-dT | 75.00 | 90.00 | 125.00 | 375.00 |
| C3-Amine | 50.00 | 60.00 | 80.00 | 240.00 |
| C12-Amine | 75.00 | 90.00 | 125.00 | 375.00 |
| dT-Alkyne | 225.00 | 250.00 | 350.00 | 1,750.00 |
| Rhodamine 6G | 180.00 | 250.00 | 380.00 | 1,050.00 |
| Pyrene-Cap | 225.00 | 250.00 | 350.00 | 1,750.00 |
| Epoch Eclips Quencher | 225.00 | 250.00 | 350.00 | 1,750.00 |
| 5'-Hexynyl | 50.00 | 60.00 | 80.00 | 240.00 |
| Pyrene-dU | 150.00 | 175.00 | 275.00 | 650.00 |
| Perylene-dU | 150.00 | 175.00 | 275.00 | 650.00 |
| C8-Alkyne-dT | 150.00 | 175.00 | 275.00 | 650.00 |
| C8-Alkyne-dC | 150.00 | 175.00 | 275.00 | 650.00 |
| AminoOxy | 125.00 | 150.00 | 220.00 | 550.00 |
| Desthiobiotin TEG | 150.00 | 175.00 | 275.00 | 750.00 |
| N3-Methyl dC | 150.00 | 175.00 | 275.00 | 650.00 |
| N4-Ethyl dC | 150.00 | 175.00 | 275.00 | 650.00 |
| 5'-OMe-dT | 75.00 | 95.00 | 150.00 | 375.00 |
| C6-Psoralen | 225.00 | 250.00 | 350.00 | 1,750.00 |
| Marina blue | 125.00 | 175.00 | 250.00 | 1,250.00 |
| DBCO TEG | 180.00 | 220.00 | 330.00 | 900.00 |
| Azobenzene | 125.00 | 175.00 | 250.00 | 1,250.00 |

| Modification | Synthesis Scale | | | |
|----------------------------------|-----------------|----------------|--------------|--------------------------------------|
| | 50 nmole (\$) | 200 nmole (\$) | 1 umole (\$) | 10 umole (\$) |
| Internal Modification | | | | |
| Amino Modifier C6 dT | 108.00 | 135.00 | 210.00 | 840.00 |
| Biotin-dT | 145.00 | 155.00 | 240.00 | 1,200.00 |
| Fluorescein dT | 145.00 | 175.00 | 240.00 | 1,200.00 |
| C3 spacer | 35.00 | 45.00 | 63.00 | 290.00 |
| C6 spacer | 35.00 | 45.00 | 63.00 | 290.00 |
| C12 spacer | 35.00 | 45.00 | 63.00 | 290.00 |
| 18 atom spacer | 45.00 | 50.00 | 80.00 | 320.00 |
| d5 spacer | 47.00 | 50.00 | 80.00 | 320.00 |
| Phosphorothioate (per insertion) | - | 3.00 | 4.00 | 20.00 |
| 5-Methyl dC | 47.00 | 55.00 | 80.00 | 320.00 |
| Inosine | 7.00 | 8.00 | 15.00 | 60.00 |
| Deoxy Uridine | 7.00 | 7.50 | 11.00 | 55.00 |
| 2'-O-Methyl | 6.00 | 7.00 | 14.00 | 55.00 |
| 5-Bromo dU | 70.00 | 90.00 | 130.00 | 600.00 |
| 8-Oxo-dA | 145.00 | 175.00 | 240.00 | 1,200.00 |
| 8-Oxo-dG | 145.00 | 175.00 | 240.00 | 1,200.00 |
| Ferrocene-dT | 145.00 | 155.00 | 240.00 | 1,200.00 |
| 5-hydroxymethyl-dC | 145.00 | 175.00 | 240.00 | 1,200.00 |
| 5-Hydroxy-dU | 145.00 | 175.00 | 240.00 | 1,200.00 |
| 5-hydroxymethyl-dU | 145.00 | 175.00 | 240.00 | 1,200.00 |
| Ara-dC | 80.00 | 100.00 | 310.00 | Less than 3 (Set-up Charge:\$200.00) |
| 5-F-dU | 90.00 | 110.00 | 350.00 | Less than 3 (Set-up Charge:\$250.00) |
| N6-methyl-2'-deoxyadenosine | 120.00 | 150.00 | 220.00 | Less than 3 (Set-up Charge:\$150.00) |
| PC (photo-cleavable)Linker | 120.00 | 150.00 | 220.00 | Less than 3 (Set-up Charge:\$250.00) |
| DNP (2,4-dinitrophenyl)-TEG | 125.00 | 175.00 | 275.00 | Less than 3 (Set-up Charge:\$150.00) |
| Cy3 | 160.00 | 200.00 | 350.00 | 1,050.00 |
| Cy5 | 160.00 | 200.00 | 350.00 | 1,050.00 |
| Cy3.5 | 180.00 | 250.00 | 380.00 | 1,050.00 |
| Cy5.5 | 180.00 | 250.00 | 380.00 | 1,050.00 |
| Puromycine | 80.00 | 100.00 | 200.00 | Less than 3 (Set-up Charge:\$150.00) |
| Yakima Yellow | 120.00 | 150.00 | 220.00 | Less than 3 (Set-up Charge:\$150.00) |
| 3'-dA | 250.00 | 275.00 | 350.00 | Inquire |
| 3'-dC | 250.00 | 275.00 | 350.00 | Inquire |
| 3'-dG | 250.00 | 275.00 | 350.00 | Inquire |
| 3'-dT | 250.00 | 275.00 | 350.00 | Inquire |
| 5'-Nitroindole | 125.00 | 175.00 | 250.00 | 450.00 |
| 2'-F-rA | 65.00 | 80.00 | 115.00 | Less than 3 (Set-up Charge:\$150.00) |
| 2'-F-rC | 65.00 | 80.00 | 115.00 | Less than 3 (Set-up Charge:\$150.00) |
| 2'-F-rG | 65.00 | 80.00 | 115.00 | Less than 3 (Set-up Charge:\$150.00) |
| 2'-F-rU | 65.00 | 80.00 | 115.00 | Less than 3 (Set-up Charge:\$150.00) |
| 2-Aminopurine | 75.00 | 90.00 | 125.00 | Less than 3 (Set-up Charge:\$150.00) |
| 2,6-Diaminopurine | 75.00 | 90.00 | 125.00 | Less than 3 (Set-up Charge:\$150.00) |
| Dithiol | 150.00 | 175.00 | 275.00 | 1,500.00 |
| EDTA-C2-dT | 120.00 | 150.00 | 275.00 | Less than 3 (Set-up Charge:\$250.00) |
| Thymidine Glycol | 65.00 | 80.00 | 115.00 | Less than 3 (Set-up Charge:\$150.00) |
| Zebularine | 150.00 | 175.00 | 275.00 | Less than 3 (Set-up Charge:\$150.00) |

| | | | | |
|-----------------------------------|--------|--------|--------|---------------------------------------|
| Biotin-TEG | 50.00 | 65.00 | 95.00 | 380.00 |
| HEX-dT | 55.00 | 66.00 | 138.00 | 600.00 |
| Methylene Blue | 150.00 | 175.00 | 275.00 | Less than 3 (Set-up Charge: \$250.00) |
| Tamra-dT | 220.00 | 250.00 | 350.00 | 1,750.00 |
| BHQ1-dT | 250.00 | 275.00 | 350.00 | 1,750.00 |
| BHQ2-dT | 250.00 | 275.00 | 350.00 | 1,750.00 |
| Dabcyl-dT | 250.00 | 275.00 | 350.00 | 1,750.00 |
| Deoxypurine (2'-DeoxyNebu larine) | 75.00 | 90.00 | 125.00 | Less than 3 (Set-up Charge: \$250.00) |
| Azide | 150.00 | 175.00 | 275.00 | 1,500.00 |
| Treble Branching | 220.00 | 250.00 | 350.00 | 1,750.00 |
| O6-Methyl 2'-dG | 75.00 | 90.00 | 125.00 | 375.00 |
| O4-Methyl-dT | 75.00 | 90.00 | 125.00 | 375.00 |
| dT-Alkyne | 225.00 | 250.00 | 350.00 | 1,750.00 |
| Epoch Eclips Quencher | 225.00 | 250.00 | 350.00 | 1,750.00 |
| Thiol-dT | 225.00 | 250.00 | 350.00 | 1,750.00 |
| Cy3 dA | 250.00 | 275.00 | 420.00 | 1,950.00 |
| Cy3 dC | 250.00 | 275.00 | 420.00 | 1,950.00 |
| Cy3 dG | 250.00 | 275.00 | 420.00 | 1,950.00 |
| Cy3 dT | 225.00 | 250.00 | 350.00 | 1,750.00 |
| Cy5 dA | 250.00 | 275.00 | 420.00 | 1,950.00 |
| Cy5 dC | 250.00 | 275.00 | 420.00 | 1,950.00 |
| Cy5 dG | 250.00 | 275.00 | 420.00 | 1,950.00 |
| Cy5 dT | 225.00 | 250.00 | 350.00 | 1,750.00 |
| Pyrene-dU | 150.00 | 175.00 | 275.00 | 650.00 |
| Perylene-dU | 150.00 | 175.00 | 275.00 | 650.00 |
| C8-Alkyne-dT | 150.00 | 175.00 | 275.00 | 650.00 |
| C8-Alkyne-dC | 150.00 | 175.00 | 275.00 | 650.00 |
| Desthiobiotin TEG | 150.00 | 175.00 | 275.00 | 750.00 |
| N3-Methyl dC | 150.00 | 175.00 | 275.00 | 650.00 |
| N4-Ethyl dC | 150.00 | 175.00 | 275.00 | 650.00 |
| Azobenzene | 125.00 | 175.00 | 250.00 | 1,250.00 |
| 8-Br-dA | 150.00 | 180.00 | 250.00 | 1,250.00 |
| 8-Br-dG | 150.00 | 180.00 | 250.00 | 1,250.00 |
| 5-Br-dC | 150.00 | 180.00 | 250.00 | 1,250.00 |
| 6-thio-dG | 225.00 | 250.00 | 350.00 | 1,750.00 |
| 4-thio-dT | 225.00 | 250.00 | 350.00 | 1,750.00 |

| Modification | Synthesis Scale | | | |
|-------------------------|-----------------|----------------|--------------|---------------|
| | 50 nmole (\$) | 200 nmole (\$) | 1 umole (\$) | 10 umole (\$) |
| 5'-FAM-3'-TAMRA | 165.00 | 233.00 | 365.00 | 1,825.00 |
| 5'-HEX-3'-TAMRA | 165.00 | 233.00 | 365.00 | 1,825.00 |
| 5'-TET-3'-TAMRA | 165.00 | 233.00 | 365.00 | 1,825.00 |
| 5'-JOE-3'-TAMRA | 350.00 | 400.00 | 800.00 | 4,000.00 |
| 5'-FAM-3'-DABCYL | 177.00 | 299.00 | 465.00 | 2,325.00 |
| 5'-HEX-3'-DABCYL | 195.00 | 295.00 | 445.00 | 2,225.00 |
| 5'-TET-3'-DABCYL | 195.00 | 295.00 | 445.00 | 2,225.00 |
| 5'-TAMRA-3'-DABCYL | 275.00 | 375.00 | 555.00 | 2,775.00 |
| 5'-JOE-3'-DABCYL | 300.00 | 350.00 | 555.00 | 2,200.00 |
| 5'-FAM-3'-BHQ1 | 175.00 | 250.00 | 375.00 | 1,875.00 |
| 5'-HEX-3'-BHQ1 | 220.00 | 315.00 | 470.00 | 2,350.00 |
| 5'-TET-3'-BHQ1 | 210.00 | 295.00 | 445.00 | 2,225.00 |
| 5'-JOE-3'-BHQ1 | 350.00 | 400.00 | 600.00 | 3,000.00 |
| 5'-TAMRA-3'-BHQ1 | 300.00 | 350.00 | 550.00 | 2,200.00 |
| 5'-ROX-3'-BHQ1 | 275.00 | 320.00 | 520.00 | 2,080.00 |
| 5'-Texas Red-3'-BHQ1 | 275.00 | 320.00 | 520.00 | 2,080.00 |
| 5'-Cy3-3'-BHQ1 | 400.00 | 450.00 | 650.00 | 2,600.00 |
| 5'-FAM-3'-BHQ2 | 175.00 | 250.00 | 375.00 | 1,875.00 |
| 5'-HEX-3'-BHQ2 | 220.00 | 315.00 | 470.00 | 2,350.00 |
| 5'-TET-3'-BHQ2 | 210.00 | 295.00 | 445.00 | 2,225.00 |
| 5'-JOE-3'-BHQ2 | 350.00 | 400.00 | 600.00 | 3,000.00 |
| 5'-TAMRA-3'-BHQ2 | 350.00 | 380.00 | 570.00 | 2,850.00 |
| 5'-ROX-3'-BHQ2 | 350.00 | 380.00 | 570.00 | 2,850.00 |
| 5'-Texas Red-3'-BHQ2 | 350.00 | 390.00 | 625.00 | 3,125.00 |
| 5'-Cy5-3'-BHQ2 | 275.00 | 320.00 | 480.00 | 2,400.00 |
| 5'-Cy3-3'-BHQ2 | 275.00 | 320.00 | 480.00 | 2,400.00 |
| 5'-FAM-BHQ1-dT-Amine-3' | 375.00 | 450.00 | 650.00 | 2,650.00 |
| 5'-FAM-Tamra-dT-PO4-3' | 375.00 | 450.00 | 650.00 | 2,650.00 |
| 5'-FAM-3'-EBQ | 158.00 | 225.00 | 338.00 | 1,688.00 |
| 5'-FAM-EBQ-dT-Amine-3' | 388.00 | 405.00 | 588.00 | 2,385.00 |
| 5'-HEX-3'-EBQ | 198.00 | 284.00 | 423.00 | 2,155.00 |
| 5'-TET-3'-EBQ | 189.00 | 266.00 | 401.00 | 2,002.00 |
| 5'-JOE-3'-EBQ | 315.00 | 360.00 | 540.00 | 2,700.00 |
| 5'-TAMRA-3'-EBQ | 270.00 | 315.00 | 495.00 | 1,980.00 |
| 5'-ROX-3'-EBQ | 315.00 | 342.00 | 513.00 | 2,565.00 |
| 5'-Texas Red-3'-EBQ | 315.00 | 342.00 | 513.00 | 2,813.00 |
| 5'-Cy5-3'-EBQ | 248.00 | 288.00 | 432.00 | 2,160.00 |
| 5'-Cy3-3'-EBQ | 248.00 | 288.00 | 432.00 | 2,160.00 |

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