ORDERING SUPPLIES FOR qPCR MARKERS

1. INTRODUCTION

1.1. This method provides instructions for ordering qPCR primers, probes, and gBlock DNA standards. These supplies are ordered for routine sample analysis and new marker validation.

2. ORDERING PRIMER/PROBE

2.1. Always purchase primers/probe together as a set. In most instances, primers should be ordered dry and salt free, and probes should be dry and HPLC purified.

2.1.1. Determining which reporter dye and quencher to order –

2.1.1.1. Probes are ordered with the 5' reporter dye listed in the publication and the same or comparable quencher. fluorescein (FAM) is a dye used in synthesis for the detection of oligos. All current probes use the 5' 6-FAM dye.

2.1.1.2. The quencher for each probe will determine which company to order from. Some primer/probe sets are ordered from IDT with the 3' Zen-Iowa Black FQ quencher. This quencher is ideal only for use with FAM dye. Assays using minor groove binder (MGB) probes which better stabilize the probe-target bond are generally ordered from Eurofins, but they can also be ordered from IDT. However, when ordering MGB probes from Integrated DNA Technologies (IDT), both the primers and probe should be ordered resuspended. MGB probes are not stable when dry.

2.1.1.3. Current assays and probe sets –

Assay	Reporter	Quencher	Typically Ordered From
HF183	6-FAM	MGB	Eurofins
BacR	6-FAM	MGB	Eurofins
DG3	6-FAM	MGB	Eurofins
GFD	6-FAM	Iowa-Black FQ	IDT
Gull2	6-FAM	Iowa-Black FQ	IDT
SKETA	6-FAM	Iowa-Black FQ	IDT
HumM2	6-FAM	Iowa-Black FQ	IDT
CowM2	6-FAM	Iowa-Black FQ	IDT
HoF597	6-FAM	Iowa-Black FQ	IDT

2.1.2. Determining which scale to order –

2.1.2.1. Primers and probes are typically ordered at a 1 µmol scale but can be ordered in smaller quantities (250 nmol) for markers that historically produce a larger yield, when testing a new marker, or for markers that are used infrequently.

The OFFICIAL COPY is the on-line version. All other copies are considered unofficial and uncontrolled.

2.1.2.2. The yield of a primer/probe is dependent on several factors including the quencher and dye used. For instance, probes with the Iowa-Black FQ quencher tend to produce higher yields at the same scale than MGB quenched probes. Based on the historical yields received for each probe and frequency of analysis it is recommended to order the assays at the following scales:

2.1.2.2.1. For HF183, BacR, DG3, and Gull2: 1 µmol scale

2.1.2.2.2. For GFD, SKETA, CowM2, HoF597, and HumM2: 250 nmol scale.

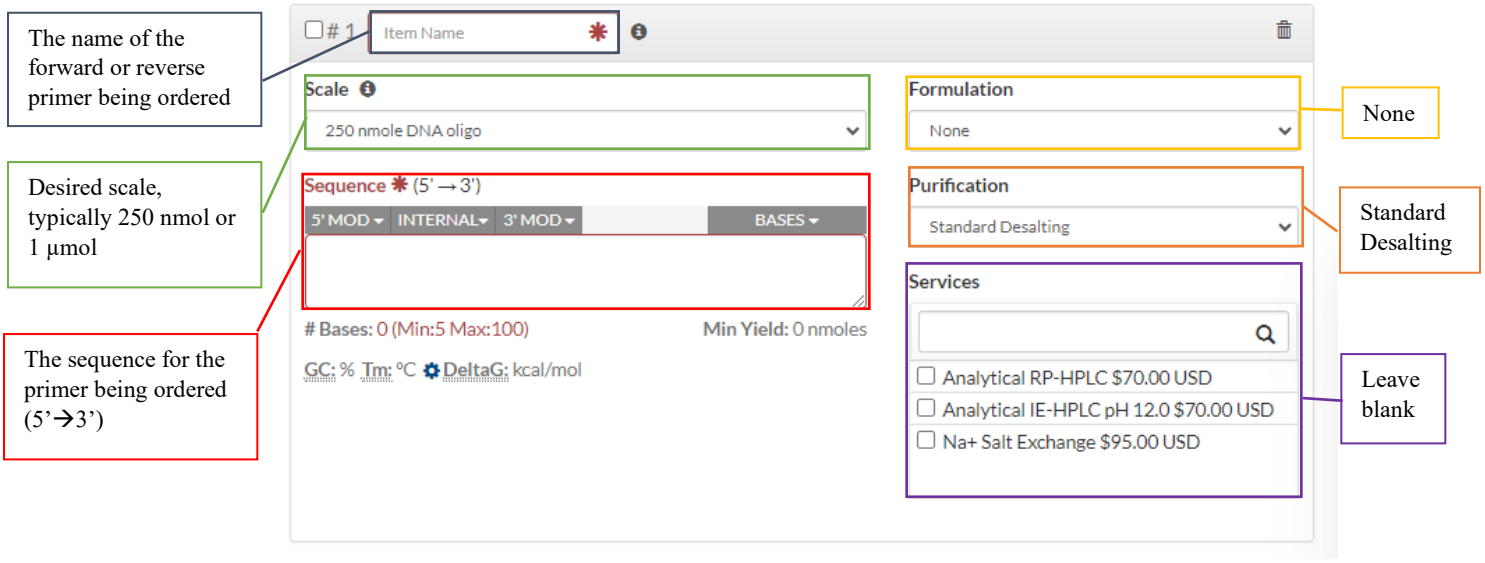
2.1.3. Order requests should be submitted to the supervisor for approval.

2.2. Ordering from IDT:

NOTE: Prior to ordering from IDT, an account must be created. The cart is then filled on the IDT website and a PCard request is placed. The current PCard form can be found here X:\Labs\Lab5\Biology\MolecularBiology\Supplies\Ordering\Pcard Orders .

2.2.1. Ordering Primers: On the IDT website (www.idtdna.com) under 'Products & Services' select 'Custom DNA'. Next click 'DNA oligos', then 'order single-stranded DNA oligos in tubes'.

2.2.1.1. In the Oligo Entry screen add the following:

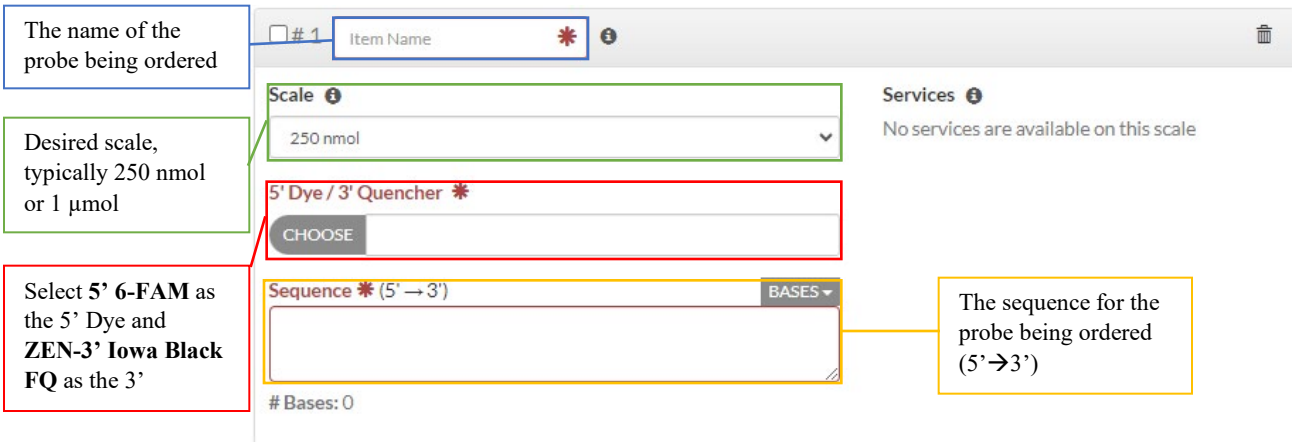


2.2.1.2. Double check that the sequences are entered correctly, then 'add primers to the cart'.

2.2.2. Ordering Probes: On the IDT website under 'Products & Services' select 'Custom qPCR probes' and choose 'PrimeTime qPCR Probes'.

2.2.2.1. In the 'PrimeTime qPCR Probes' entry screen add the following:

The OFFICIAL COPY is the on-line version. All other copies are considered unofficial and uncontrolled.



2.2.2.2. The default purification method is 'HPLC' and no additional services or reagents are needed.

2.2.2.3. Double check that the sequence is entered correctly, then 'add the probe to the cart'.

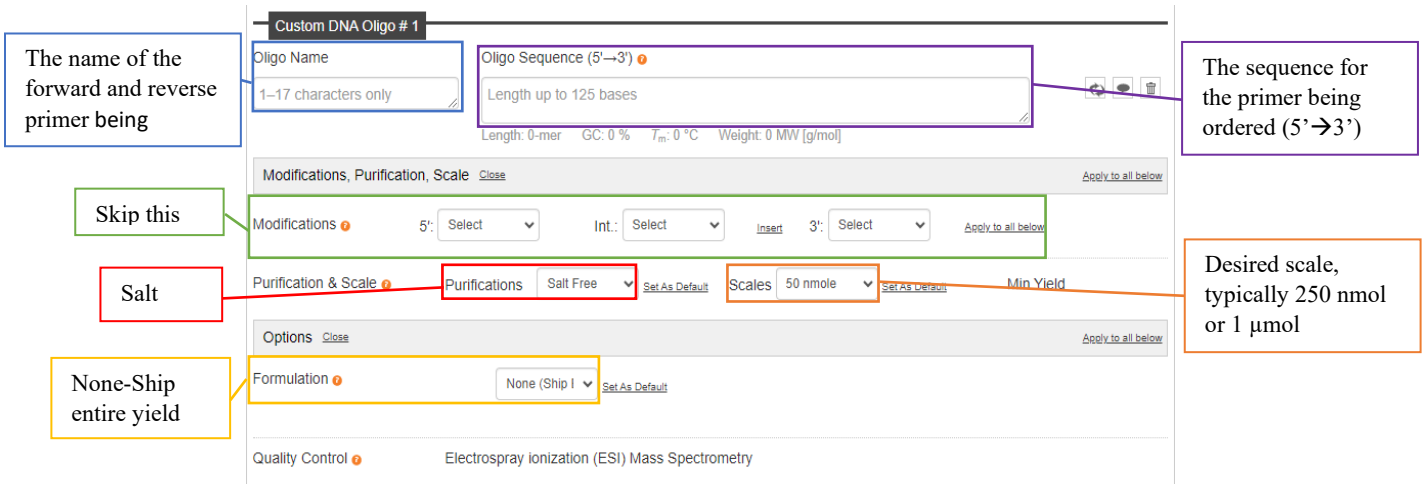
2.2.3. Once the cart is filled, email it to yourself . Fill out a PCard request form with cost and details of order and submit by email to supervisor for approval. The supervisor will save the file as a PDF and send to the Program Administrator.

2.3. Ordering from Eurofins:

NOTE: Prior to ordering from Eurofins, an account must be created. The cart is then filled on the Eurofins website and a PCard request is placed.

2.3.1. Ordering Primers: On the Eurofins Genomics website (www.eurofinsgenomics.com) select 'Order Now' then select 'Custom DNA' under 'Oligos'. Select 'Custom DNA Oligos' then 'Order DNA in Tubes'. Choose the number of oligos and manual entry, then press next.

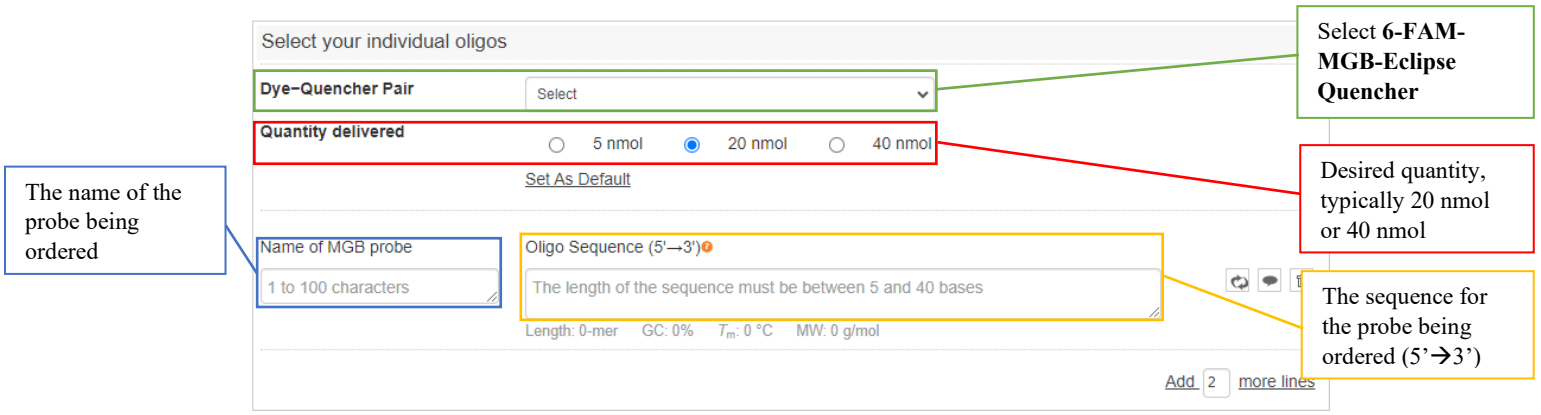
2.3.1.1. In the entry screen add the following:



2.3.1.2. Double check that the sequences are entered correctly, then 'add primers to the cart'.

2.3.2. Ordering Probes: On the Eurofins website under 'Order Now', select 'MGB Probes' from under 'Oligos'. Choose the number of MGB probes and manual entry, then press next.

2.3.2.1. In the MGB Probes entry screen add the following:



2.3.2.2. The default purification method is 'HPLC'.

2.3.2.3. Double check that the sequence is entered correctly, then 'add the probe to the cart'.

2.3.3. Once the cart is filled, click PDF to save a copy of the cart. Fill out a PCard request with cost and details of the order and submit by email to supervisor for approval. The supervisor will send the PDF to the Program Administrator.

NOTE: The cart cannot be emailed so items must be entered manually at the time of the order.

3. ORDERING STANDARDS

3.1. All current assays except SKETA use a gBlock fragment for spikes and standards. gBlocks are double-stranded DNA fragments that are designed to contain the target sequence for one or more assays. They can be ordered from IDT alone or in combination with other target sequences if the fragments are compatible. These can be tested in various combinations. They are delivered dry in a centrifuge tube and normalized to 250, 500, or 1000 ng depending on length.

3.2. To order gBlock fragments, a cart is filled on the IDT website then a Pcard request is placed.

3.2.1. On the website www.idtdna.com under 'Products & Services' select 'Double-Stranded DNA fragments'. Order 'gBlocks gene fragments in tubes'. Add in the gBlock name and sequence. No modifications are needed. Test complexity and add to cart if sequence passes initial screening. Refer to the published method or DEP SOP for each marker for

The OFFICIAL COPY is the on-line version. All other copies are considered unofficial and uncontrolled.

sequence information. Double check to ensure the sequence is entered correctly.

3.2.2. Once cart is filled, email cart to analyst. Fill out Pcard request with cost and details of order and submit by email to supervisor for approval as described in 2.2.3.

Appendix of Significant Changes

07/29/2024 Added detailed information to Sections 2.1., 2.2 and 2.3.

08/01/2025 Added HoF597 marker details to Sections 2.1.1.3 and 2.1.2.2.2.

08/04/2026 Updated the link for Pcard form in Section 2.2.

The OFFICIAL COPY is the on-line version. All other copies are considered unofficial and uncontrolled.