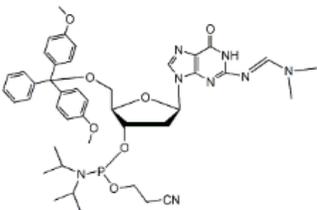


## CERTIFICATE OF ANALYSIS

<b>PRODUCT NAME:</b>	dG(dmf) FastPhoramidite,500mg	<b>STRUCTURE</b> 
<b>PRODUCT NUMBER:</b>	401182	
<b>LOT NUMBER:</b>	UF3402	
<b>BULK NUMBER:</b>	UE0115	
<b>DESCRIPTION:</b>	5'-O-Dimethoxytrityl-N2(dimethylaminoformamidite)-2'-deoxyguanosine-3'-O-(β-cyanoethyl-N,N-diisopropyl) phosphoramidite	
<b>CHEMICAL FORMULA:</b>	C <sub>43</sub> H <sub>53</sub> N <sub>8</sub> O <sub>7</sub> P	
<b>MOLECULAR WEIGHT:</b>	824.9 g/mol	
<b>CAS NUMBER:</b>	330628-04-1	
<b>STORE:</b>	-20°C	
<b>SHIP:</b>	Ambient	
<b>MANUFACTURE DATE:</b>	05/13/2019	
<b>RETEST DATE:</b>	11/13/2022	
<b>EXPIRATION DATE:</b>	05/12/2023	

## ANALYSIS RESULTS

Property	Specification Limits	Observed Value
HPLC Purity	≥ 98.0%	99.2%
<sup>31</sup> P NMR Purity	≥ 98.0%	99.0%
	Sum of 140-152 ppm ≤ 1.5%	0.0%
Average Coupling Efficiency	≥ 98.0%	99.0%
Sum of Acetonitrile, Ethyl Acetate and Dichloromethane	≤ 3.0%	2.0%
Material Origin (TSE/BSE)	No known animal-derived materials were used in the manufacture of this product	Pass

For Research Use Only: Not for use in diagnostic procedures.

Phosphoramidites are sensitive to environmental conditions when in powder or liquid form. Take precautions to avoid potential precipitation, degradation or hydrolysis that can affect performance or delivery of the phosphoramidite during synthesis. Control temperature, humidity, and exposure time to air for both the phosphoramidite and diluent.

QC Release By:

*R. Kogutkiewicz*

Gina Kogutkiewicz  
Manager, Business Systems & Compliance  
5/9/2019

QC Release Date:

Revision 5