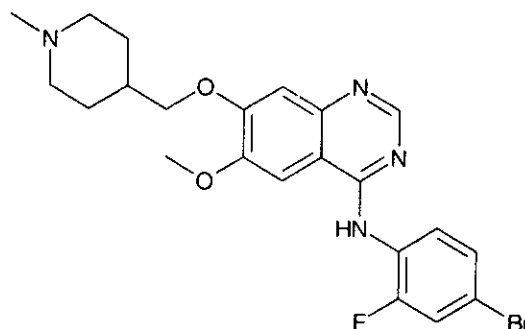


# LC Laboratories®

## CERTIFICATE OF ANALYSIS

### Vandetanib, Free Base >99%

LC LABS CAT. NO. **V-9402**  
FORMULA  $C_{22}H_{24}BrFN_4O_2$   
M.W. 475.35  
CAS NO. [443913-73-3]  
STORAGE: Store in the dark  
at or below -20 °C



SOLUBILITY: Soluble in DMSO at 30 mg/mL; soluble in ethanol at 10 mg/mL after warming; very poorly soluble in water; maximum water solubility is estimated to be about 10-20  $\mu$ M; buffers, serum, or other additives may increase or decrease the aqueous solubility.

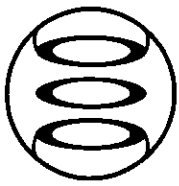
## ANALYTICAL DATA

LOT NUMBER **BTB-108**  
FORM Crystalline solid; granular or powder  
COLOR White to off-white  
HPLC PURITY >99% (see attached chromatogram)  
TLC PURITY >99% (see attached chromatogram)  
MELTING POINT 223-224 °C  
PROTON NMR (see attached spectrum)

<u>ELEMENTAL ANALYSIS</u>	For: $C_{22}H_{24}BrFN_4O_2$ :	<u>Calculated</u>	<u>Found</u>
		C 55.59%	55.81%
		H 5.09%	5.16%
		Br 16.81%	16.80%
		F 4.00%	3.84%
		N 11.79%	11.67%

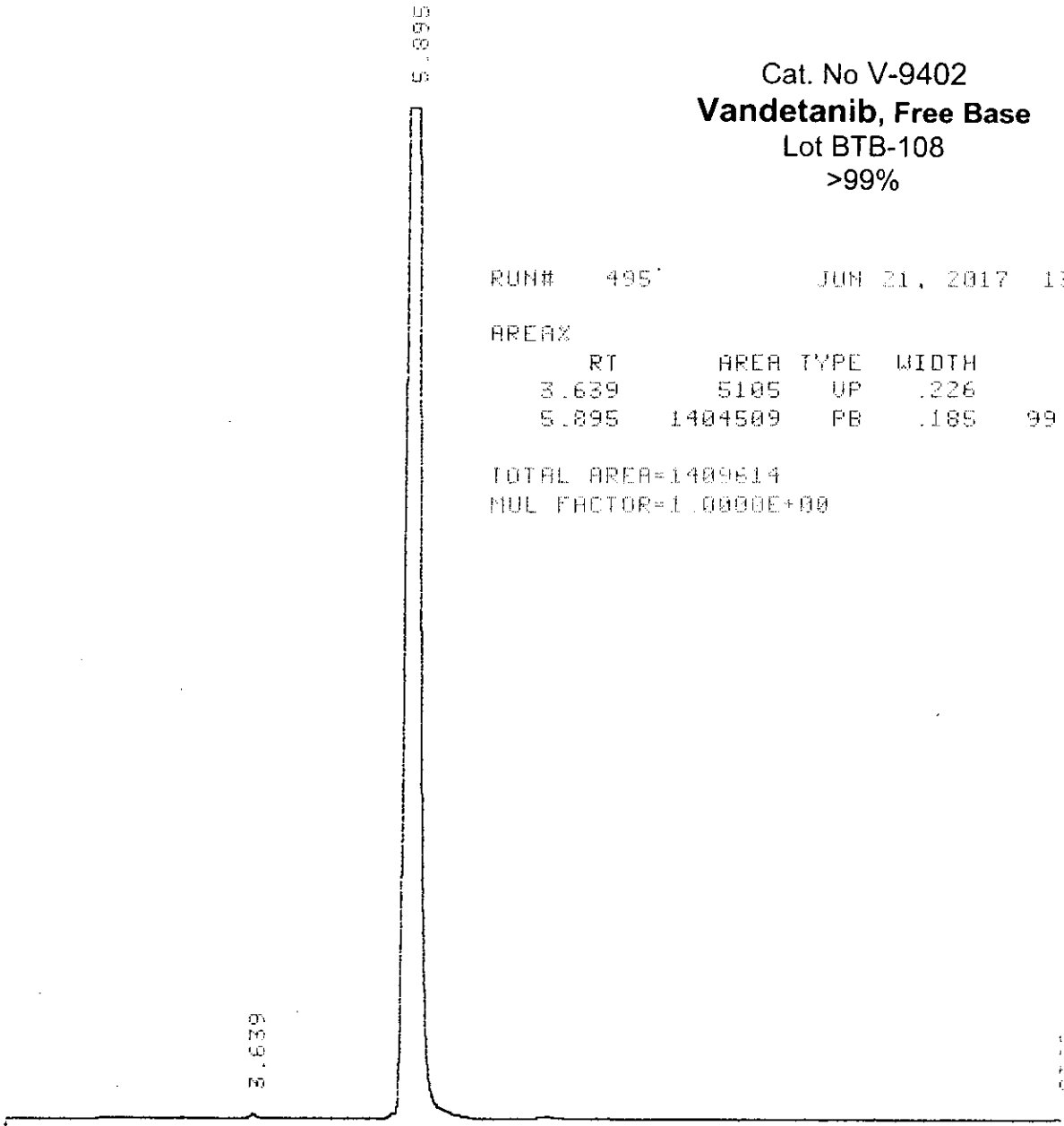
July 5, 2017

Tommy.D:\COFA-BIZ\B-COFA\BTB-108.WPD



# LC Laboratories®

\*CAT. No. V-9402 VANDETANIB, FREE BASE LOT No. BTB-108  
\* RUN # 495 JUN 21, 2017 13:06:18  
STRT



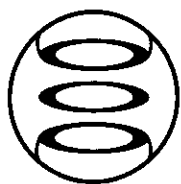
Cat. No V-9402  
**Vandetanib, Free Base**  
Lot BTB-108  
>99%

RUN# 495 JUN 21, 2017 13:06:18

RT	AREA	TYPE	WIDTH	AREA%
3.639	5105	UP	.226	.36216
5.895	1404509	PB	.185	99.63786

TOTAL AREA=1409614  
MUL FACTOR=1.0000E+00

HPLC: C<sub>18</sub> Column, 4.6 mm x 30 cm  
Acetonitrile/Methanol/Water/Trifluoroacetic Acid 22/22/56/0.1  
2 mL/min  
UV<sub>254</sub> Detection



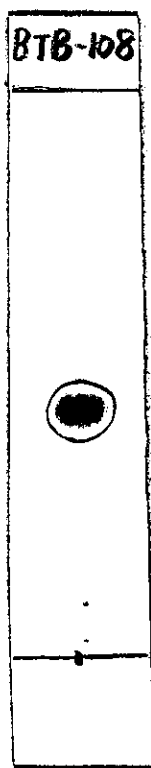
# LC Laboratories®

Cat. No V-9402

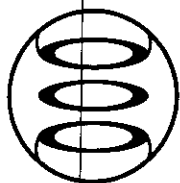
**Vandetanib, Free Base**

Lot BTB-108

>99%

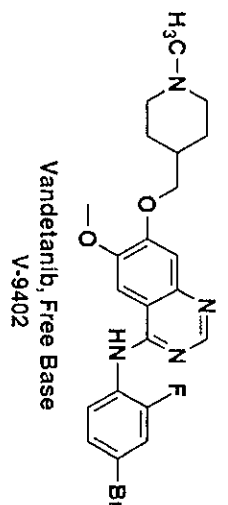
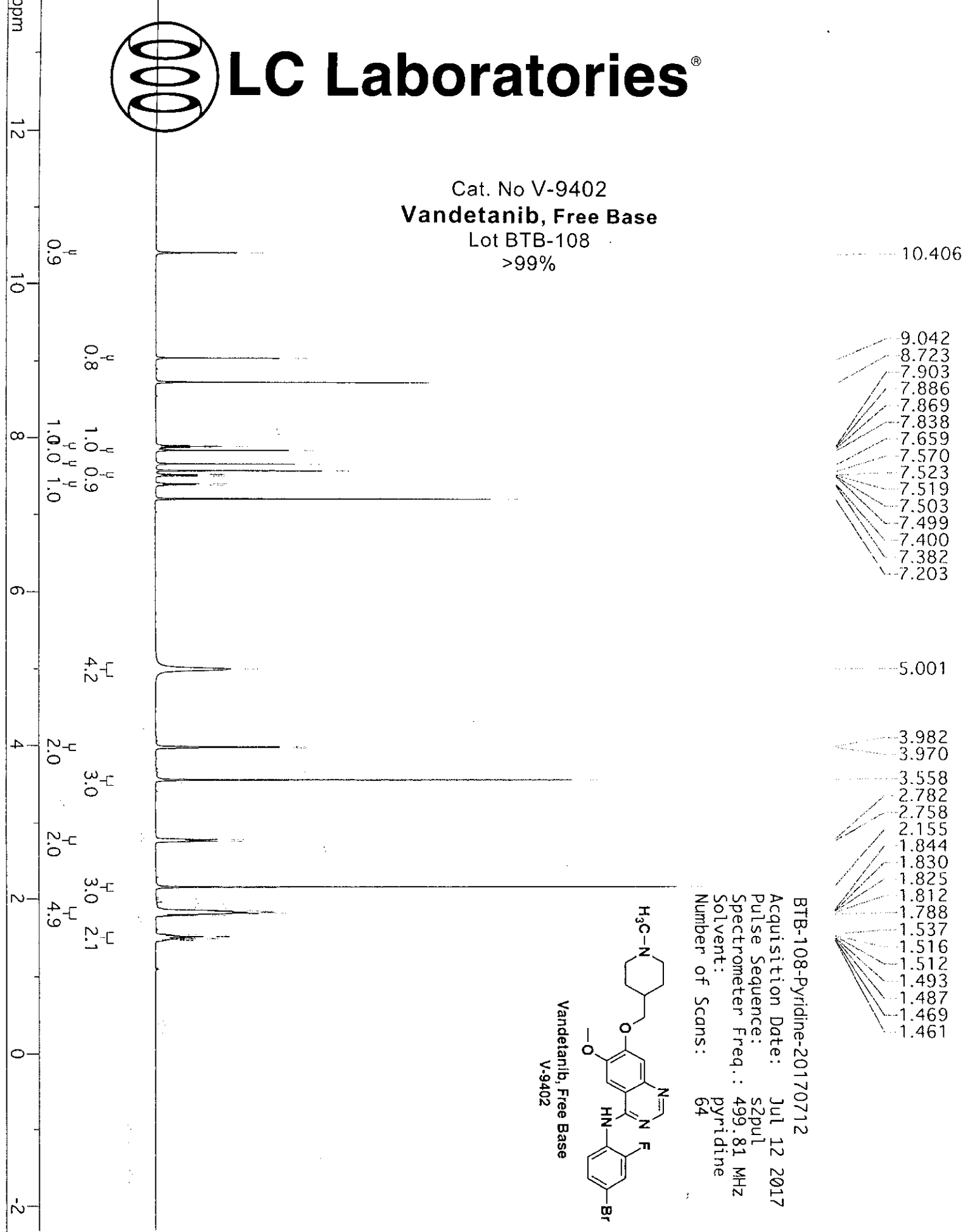


- TLC: 60 Å silica gel plates with fluorescent indicator
- Develop with Chloroform/Methanol/Conc.NH<sub>4</sub>OH 84/16/1
- Visualize via UV fluorescence quenching
- Also visualize by exposure to iodine vapor



# LC Laboratories®

Cat. No V-9402  
**Vandetanib, Free Base**  
 Lot BTB-108  
 >99%



BTB-108-Pyridine-20170712  
 Acquisition Date: Jul 12 2017  
 Pulse Sequence: s2pul  
 Spectrometer Freq.: 499.81 MHz  
 Solvent: pyridine  
 Number of Scans: 64