EUTICALS
The Pharmaceutical & Fine Chemical Company

PRIME EUROPEAN THERAPEUTICALS SpA - Sole Shareholder
Registered Office: Viale Bianca Maria, 25 - 20122 Milano - Administrative Office: Viale Milano, 86 - 26900 Lodi

CERTIFICATE OF ANALYSIS

Product : ***SIROLIMUS***

MANUFACTURING SITE: EUTICALS SpA – Via Volturno 41/43 – 20089 Rozzano (MI)

Batch no.:	**IE1600807A**		**Code:**	**30124**
Manufacturing date:	**December 2016**	**Analysis date: January 2017**	**Re-test date:**	**December 2021**

TEST	SPECIFICATIONS	ANALYSIS VALUE
Characters:		
- Appearance	White to almost-white powder.	complies
- Solubility	Soluble in ether, acetone, methanol; slightly soluble in n-hexane; practically insoluble in water	complies
Identification:		
- HPLC	the RT of the main peak of the product under analysis must be concordant with that of the standard	complies
- IR spectrum	comply with the standard material	complies
Loss on Drying (TGA):	not more than 1.0 %	not detectable
Sulfated ash	not more than 0.1 %	0.2 %
Specific optical rotation	- 140 to -160° (on anhydrous and solvent free basis, 10 mg/mL in methanol)	- 153°
Heavy metals	not more than 20 pp	less than 20 ppm
Water (K.F.)	not more than 0.5 %	0.1 %
Sirolimus isomer (rrt 1.1)	report the found value	2.4 %
Assay (HPLC)	between 96.5 % and 102.0 % (on anhydrous basis, expressed as sum of Sirolimus and Sirolimus isomer)	100.2 %
Related substances (HPLC):		
- 27-O-demethyl-rapamycin	not more than 0.5 %	0.1 %
- 16-O-demethyl-rapamycin	not more than 0.5 %	not detectable
- Prolylrapamycin	not more than 0.5 %	0.1 %
- 27-demethoxyrapamycin	not more than 0.2 %	not detectable
- 40-oxorapamycin	not more than 0.2 %	not detectable
- 11-ethyl/23-ethyl-rapamycin	not more than 0.5 %	0.1 %
- Any other	not more than 0.2 % each	not detectable
- Total (specified+unspecified)	not more than 1.5 %	0.3 %
Residual solvents:		
- Acetone	not more than 500 ppm	not detectable
- Ethyl ether	not more than 500 ppm	not detectable
TAMC	not more than 100 CFU/g	< 10 CFU/g
TYMC	not more than 10 CFU/g	< 10 CFU/g

Milan – February 2, 2017

Q.C. Manager

DR.SSA MICHELA RAMPI

This is to certify that the batch was manufactured according to c-GMP

Qualified Person

DR. CARLO TOMBA

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