

CERTIFICATE OF ANALYSIS

Product : **SIROLIMUS**

MANUFACTURING SITE: EUTICALS SpA - Via Volturmo 41/43 - 20089 Rozzano (MI)		
Batch no.:	IE1400162A	Code: 30124
Manufacturing date:	February 2014	Analysis date: March 2014
		Re-test date: February 2019
TEST	SPECIFICATIONS	ANALYSIS VALUE
<i>Characters:</i>		
- Appearance	White to almost-white powder.	complies
- Solubility	Soluble in ether, acetone, methanol; slightly soluble in n-hexane; practically insoluble in water	complies
<i>Identification:</i>		
- 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 %	0.0 %
Specific optical rotation	- 140 to -160° (on anhydrous and solvent free basis, 10 mg/mL in methanol)	- 149°
Heavy metals	not more than 20 ppm	less than 20 ppm
Water (K.F.)	not more than 0.5 %	0.2 %
Sirolimus isomer (rtt 1.1)	report the found value	2.5 %
Assay (HPLC)	between 96.5 % and 102.0 % (on anhydrous basis, expressed as sum of Sirolimus and Sirolimus isomer)	100.4 %
<i>Related substances (HPLC):</i>		
- 27-O-demethyl-rapamycin	not more than 0.5 %	0.2 %
- 16-O-demethyl-rapamycin	not more than 0.5 %	0.1 %
- Prolylrapamycin	not more than 0.5 %	0.2 %
- 27-demethoxyrapamycin	not more than 0.2 %	not detectable
- 40-oxorapamycin	not more than 0.2 %	0.1 %
- 11-ethyl- & 23-ethyl-rapam.	not more than 0.5 %	0.2 %
- Any other	not more than 0.2 % each	0.1 %
- Total (specified+unspecified)	not more than 1.5 %	0.8 %
<i>Residual solvents:</i>		
- Acetone	not more than 500 ppm	3 ppm
- Ethyl ether	not more than 500 ppm	not detectable
TAMC	not more than 100 ufc/g	< 10 ufc/g
TYMC	not more than 10 ufc/g	< 10 ufc/g

Milan - September 5, 2016

Q.C. Manager

DR.SSA MICHELA RAMPI

Qualified Person

DR. CARLO TOMBA

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

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