LEUPROLIDE (LEUPRORELIN) EU DRUG SUBSTANCE SPECIFICATION

PolyPeptide GROUP

Molecular weight: 1209.4 (free peptide)

Sequence: p-Glu-His-Trp-Ser-Tyr-D-Leu-Leu-Arg-Pro-NHEt

Last update: 25 AUG 2021

Available registration documents (CTD format): CEP/COS certificate

TEST	ACCEPTANCE CRITERION	ANALYTICAL PROCEDURE
Appearance	White or almost white powder	Visual inspection
Solubility	Soluble in water and 1% (v/v) aqueous acetic acid at a concentration of ≥ 10 mg/mL to give a clear, colorless solution	Visual inspection
Identity, MS	Monoisotopic mass: 1208.7 ± 1	Ph. Eur.
Identity, Amino acid analysis		Ph. Eur.
	Ser Present Glx 0.85 to1.1 Pro 0.85 to1.1 Leu 1.8 to 2.2 Tyr 0.85 to1.1 His 0.85 to1.1 Arg 0.85 to1.1 Trp Present	
Identity, HPLC	Co-elutes with reference standard	Ph. Eur.
Peptide purity, HPLC	≥ 97.5 %	Ph. Eur.
Total impurities, HPLC	≤ 2.5 %	Ph. Eur.
Related substances, HPLC		Ph. Eur.
Any unspecified impurity	≤ 0.5 %	
Specified impurities[1]		

[1] Detailed impurity specification not provided

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Acetic acid content, HPLC	4.7 % to 9.0 %		In-house
Water, (Karl Fischer titration)	≤ 5.0 %		Ph. Eur.
Leuprorelin content (With reference to the anhydrous, acetic acid free substance)	97.0 % to 103.0 %		Calculation
Specific optical rotation $[\alpha]_D^{20}$ (c = 1, 1% acetic acid) (With reference to the anhydrous, acetic acid free substance)	-38 to -42°		Ph. Eur.
Residual solvents, GC			In-house
	Acetonitrile	≤ 410 ppm (w/w)	
	Diisopropylethylamine	≤ 320 ppm (w/w)	
	Dimethylformamide	≤ 880 ppm (w/w)	
	Ethanol	≤ 1000 ppm (w/w)	
	Isopropanol	≤ 1000 ppm (w/w)	
	Methanol	≤ 1000 ppm (w/w)	
	Dichloromethane	≤ 500 ppm (w/w)	
	Triethylamine	≤ 320 ppm (w/w)	
Trifluoroacetic acid, HPLC	≤ 0.1 %		In-house
Phosphate, IC	≤ 0.1 %		In-house
Residue on ignition	≤ 0.3 %		Ph. Eur.
Bacterial endotoxins	< 16.7 IU/mg		Ph. Eur.