

WADA Verbotliste 2018, S2 Peptidhormone.../ 2.3 Growth Hormone ... (Änderungen zu 2017 in rot)

Substanzname	Struktur (bei Peptiden Aminosäuresequenz)	AS	Monoisotopische Masse [Da]	Literatur	Synonym
2.3 Growth Hormone (GH), its fragments and releasing factors, including, but not limited to:					
Growth Hormone fragments, e.g.					
GH		191	22111.04	www.drugbank.ca	Somatropin, Somatotropin
<b>AOD-9604</b>	YLRIVQCRSVEGSCGF	16	1813.9	Ng 2000	
<b>hGH 176-191</b>	FLRIVQCRSVEGSCGF	16	1797.9	PubChem	Somatropin (176-191)
Growth Hormone Releasing Hormone (GHRH) and its analogues					
GHRH	YADAIFTNSYRKVLGQLSARKLLQDIMSRQGESNQERGARARL-NH2	44	5036.7	Guillemin 1982	Somatoliberin
<b>CJC-1293</b>	YdADAIFTNSYRKVLGQLSARKLLQDIMSR-NH2	29	3355.8	Knoop 2016	"GHRH (1-29) aber, dA statt A"
CJC-1295	YdADAIFTQSYRKVLAQLSARKLLQDILSR-NH2	29	3365.9	Knoop 2016	
Sermorelin	YADAIFTNSYRKVLGQLSARKLLQDIMSR-NH2	29	3355.8	Knoop 2016	Geref, GHRH (1-29)
Tesamorelin	hexenoyl-YADAIFTNSYRKVLGQLSARKLLQDIMSRQGESNQERGARARL-NH2	44	5132.7	Knoop 2016	Egrifta, "hexenoyl-GHRH"
Growth Hormone Secretagogues (GHS), e.g. ghrelin and ghrelin mimetics,					
Ghrelin	GSXFLSPEHQVRVQRKESKKPPAKLQPR (X = Serin-octyl)	28	3368.9	PubChem	
Anamorelin	kein Peptid, C <sub>31</sub> H <sub>42</sub> N <sub>6</sub> O <sub>3</sub>	-	546.332	PubChem	ONO-7643, RC-1291
Ipamorelin	Aib-His-(D-β-Nal)-(D-Phe)-Lys-NH2	5	711.385	Thomas 2011	
<b>Tabimorelin</b>	kein Peptid, C <sub>32</sub> H <sub>40</sub> N <sub>4</sub> O <sub>3</sub>	-	528.310	PubChem	NN-703
GH-Releasing Peptides (GHRPs), e.g.					
Alexamorelin	Ala-His-(D-Mrp)-Ala-Trp-(D-Phe)-Lys-NH2	7	957.497	Thomas 2011	
<b>GHRP-1</b>	Ala-His-(D-β-Nal)-Ala-Trp-(D-Phe)-Lys-NH2	6	954.486	Thomas 2011	
GHRP-2 (pralmorelin)	(D-Ala)-(D-β-Nal)-Ala-Trp-(D-Phe)-Lys-NH2	6	817.427	Thomas 2011	
<b>GHRP-3</b>	Aib-(D-Trp)-(D-Pro)-(D-Ile)-Arg-NH2	4	654.400	Thomas 2016	
<b>GHRP-4</b>	(D-Trp)-Ala-Trp-(D-Phe)-NH2	4	607.292	Thomas 2011	
<b>GHRP-5</b>	Tyr-(D-Trp)-Ala-Trp-(D-Phe)-NH2	5	770.354	Thomas 2011	
<b>GHRP-6</b>	His-(D-Trp)-Ala-Trp-(D-Phe)-Lys-NH2	6	872.444	Thomas 2011	
Hexarelin	His-(D-Mrp)-Ala-Trp-(D-Phe)-Lys-NH2	6	886.460	Thomas 2011	

Nal = Naphthylalanine, Mrp = 2-Methyltryptophane, Aib = Aminoisobutyric acid

dA = D-Alanin, AS = Anzahl Aminosäuren

Bei Peptiden mit AS > 10 wurden für die Sequenz Symbole verwendet, ansonsten die Abkürzungen

Literatur
PubChem, <a href="https://pubchem.ncbi.nlm.nih.gov/#">https://pubchem.ncbi.nlm.nih.gov/#</a>
Knoop, A., Thomas, A., Fichant, E., Delahaut, P., Schänzer, W., Thevis, M.: Qualitative identification of growth hormone-releasing hormones in human plasma by means of immunoaffinity purification and LC-HRMS/MS. <i>Anal Bioanal Chem</i> (2016) 408: 3145-53.
Thomas A, Görgens C, Guddat S, Thieme D, Delanna F, Schänzer W, Thevis M. Simplifying and expanding the screening for peptides < 2 kDa by direct urine injection, liquid chromatography, and ion mobility mass spectrometry. <i>J Sep Sci</i> . 2016 Jan;39(2):333-41
Thomas A, Höppner S, Geyer H, Schänzer W, Petrou M, Kwiatkowska D, Pokrywka A, Thevis M Determination of growth hormone releasing peptides (GHRP) and their major metabolites in human urine for doping controls by means of liquid chromatography mass spectrometry <i>Anal Bioanal Chem.</i> , 2011, 401, 507-516
Ng FM, Sun J, Sharma L, Libinaka R, Jiang WJ, Gianello R. Metabolic studies of a synthetic lipolytic domain (AOD9604) of human growth hormone. <i>Horm Res</i> . 2000;53(6):274-8.
Guillemin R, Brazeau P, Böhlen P, Esch F, Ling N, Wehrenberg WB. Growth hormone-releasing factor from a human pancreatic tumor that caused acromegaly. <i>Science</i> , 1982 Nov 5;218(4572):585-7.