

[¹²⁵I]-[NLE⁴, D-PHE⁷]-α-MELANOCYTE STIMULATING HORMONE

Product Number: NEX352

[¹²⁵I]-[Nle⁴, D-Phe⁷]-α-MSHAc-Ser-[¹²⁵I]Tyr-Ser-Nle-Glu-His-D-Phe-Arg-Trp-Gly-Lys-Pro-Val-NH₂**LOT SPECIFIC INFORMATION**

CALCULATED AS OF: 15-Jan-2024

LOT NUMBER: IM22340

SPECIFIC ACTIVITY: 81.4 TBq/mmol
 2200 Ci/mmol
 46 MBq/μg
 1243 μCi/μg

CONCENTRATION: 3.2 MBq/ml
 87.2 μCi/ml

RADIOCHEMICAL PURITY: ≥ 95%

MOLECULAR WEIGHT: ~1770

Package Size Information

Package Size as of 23-Feb-2024	Volume
370 kBq 10 μCi	0.20 mL
1.85 MBq 50 μCi	1.00 mL

PACKAGING: [¹²⁵I]-[Nle⁴, D-Phe⁷]-α-MSH is in a solution containing 0.08M Tris HCl, 0.08M NaCl, 0.05M β-mercaptoethanol, 0.25% BSA, 50 KIU/ml Trasylol®, (pH 8.5); ethanol, 5:1. It is shipped on dry ice.

STABILITY AND STORAGE: [¹²⁵I]-[Nle⁴, D-Phe⁷]-α-MSH should be stored at -20°C. Under these conditions the product is stable and usable for at least six weeks after fresh lot date.

SPECIFIC ACTIVITY: The initial specific activity of [¹²⁵I]-[Nle⁴, D-Phe⁷]-α-MSH is 2200 Ci/mmol, (81 TBq/mmol), 1243 μCi/μg (46 MBq/μg). Preparative HPLC is used to separate unlabeled [Nle⁴, D-Phe⁷]-α-MSH from [¹²⁵I]-[Nle⁴, D-Phe⁷]-α-MSH. Upon decay, [¹²⁵I]-[Nle⁴, D-Phe⁷]-α-MSH undergoes decay catastrophe and the specific activity remains constant with time. However, it is not known what molecular fragments are generated from the decay event or what functional activity these fragments may have in different assays. References on ¹²⁵I decay and decay catastrophe of ¹²⁵I labeled compounds are available.¹⁻⁵

RADIOCHEMICAL PURITY: Initially greater than 95% radiochemically pure as determined by HPLC.

PREPARATIVE PROCEDURE: [¹²⁵I]-[Nle⁴, D-Phe⁷]-α-MSH is radioiodinated with no carrier added ¹²⁵I using a modification of the Hunter and Greenwood method⁶ and purified by reversed phase HPLC.

AVAILABILITY: [¹²⁵I]-[Nle⁴, D-Phe⁷]-α-MSH is routinely available from stock and prepared fresh and packaged for shipment on the third Monday of each month. Please inquire for larger package sizes.

APPLICATIONS: [¹²⁵I]-[Nle⁴, D-Phe⁷]-α-MSH is a highly potent and metabolically stable analog of α-MSH.⁷ [¹²⁵I]-[Nle⁴, D-Phe⁷]-α-MSH can be used to label all subtypes of melanocortin receptors with high affinity and low non-specific binding.

HAZARD WARNING: This product contains a chemical (s) known to the state of California to cause cancer. This product also contains a component which is harmful by contact, ingestion or inhalation. It is irritating to the eyes. It is toxic and flammable. Target organs are the central nervous system, respiratory system, kidneys and liver.

RADIATION UNSHIELDED: 280mR/hr/mCi at vial surface.

REFERENCES:

1. Doyle, V.M., Buhler, F.R., Burgisser, E., *Eur. J. Pharm.* 99 353 (1984).
2. Schmidt, J., *J. Biol. Chem.* 259 1660 (1984).
3. Loring (1982).
4. Berridge, M.S., Jiang, V.W., Welch, M.J., *Rad. Res.* 82 467 (1980).
5. Charlton, D.E., *Rad. Res.* 107 163 (1986).
6. Hunter and Greenwood, F.C., *Nature* 194 495 (1962).
7. Hruby, V.J., Lu, D., Sharma, S.D., de L. Castrucci, A., Kesterson, R.A., Al-Obeidi, F.A., Hadley, M.E., Cone, R.D., *J. Med. Chem.* 38 3451-61 (1995).

IODINE-125 DECAY CHART HALF LIFE=60 days

Radiations Gamma 35.5 keV (7%), X-ray K alpha 27 KeV (112%), K beta 31 keV (24%)

DAYS	0	2	4	6	8	10	12	14	16	18
0	1.000	0.977	0.955	0.933	0.912	0.891	0.871	0.851	0.831	0.812
20	0.794	0.776	0.758	0.741	0.724	0.707	0.691	0.675	0.660	0.645
40	0.630	0.616	0.602	0.588	0.574	0.561	0.548	0.536	0.524	0.512
60	0.500	0.489	0.477	0.467	0.456	0.445	0.435	0.425	0.416	0.406
80	0.397	0.388	0.379	0.370	0.362	0.354	0.345	0.338	0.330	0.322
100	0.315	0.308	0.301	0.294	0.287	0.281	0.274	0.268	0.262	0.256
120	0.250	0.244	0.239	0.233	0.228	0.223	0.218	0.213	0.208	0.203

To obtain the correct radioactive concentration or amount for a date before the calibration date: divide by the decay factor corresponding to the number of days before the calibration date. To obtain the correct radioactive concentration or amount for a date after the calibration date: multiply by the decay factor corresponding to the number of days after the calibration date.

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