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Research use only. Not for use in diagnostic procedures.

TECHNICAL DATA SHEET

^{125}I Research Reagents

[^{125}I]-[NLE^4, D-PHE^7]-α-MELANOCYTE STIMULATING HORMONE

Product Number: NEX352

[^{125}I]-[Nle^4, D-Phe^7]-α-MSH

Ac-Ser-[^{125}I]Tyr-Ser-Nle-Glu-His-D-Phe-Arg-Trp-Gly-Lys-Pro-Val-NH$_2$

LOT SPECIFIC INFORMATION

CALCULATED AS OF: 15-Apr-2024

LOT NUMBER: IM52440

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

CONCENTRATION:
- 3.3 MBq/ml
- 89.6 µCi/ml

RADIOCHEMICAL PURITY: ≥ 95%

MOLECULAR WEIGHT: ~1770

Package Size Information		
Package Size as of 24-May-2024		Volume
370 kBq 10 µCi		0.20 mL
1.85 MBq 50 µCi		1.00 mL

PACKAGING: [^{125}I]-[Nle^4, D-Phe^7]-α -MSH is in a solution containing 0.08M Tris HCl, 0.08M NaCl, 0.05M ß-mercaptoethanol, 0.25% BSA, 50 KIU/ml Trasylol®, (pH 8.5): ethanol, 5:1. It is shipped on dry ice.

STABILITY AND STORAGE: [^{125}I]-[Nle^4, D-Phe^7]-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 [^{125}I]-[Nle^4, D-Phe^7]-α-MSH is 2200 Ci/mmol, (81 TBq/mmol), 1243 µCi/µg (46 MBq/□g). Preparative HPLC is used to separate unlabeled [Nle^4, D-Phe^7]-α-MSH from [^{125}I]-[Nle^4, D-Phe^7]-α-MSH. Upon decay, [^{125}I]-[Nle^4, D-Phe^7]-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 ^{125}I decay and decay catastrophe of ^{125}I labeled compounds are available.[1-5]

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

PREPARATIVE PROCEDURE: [Nle⁴, D-Phe⁷]-α-MSH is radioiodinated with no carrier added ^{125}I using a modification of the Hunter and Greenwood method[6] and purified by reversed phase HPLC.

AVAILABILITY: [^{125}I]-[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: [^{125}I]-[Nle⁴, D-Phe⁷]-α-MSH is a highly potent and metabolically stable analog of α-MSH.[7] [^{125}I]-[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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