

# [<sup>125</sup>I]- STROMAL CELL-DERIVED FACTOR 1 ALPHA (HUMAN, RECOMINANT)

Product Number: NEX346

**CXCL12**  
**[<sup>125</sup>I]-SDF-1 $\alpha$**

## LOT SPECIFIC INFORMATION

**CALCULATED AS OF:** 21-Oct-2024

**LOT NUMBER:** IFA2240

**SPECIFIC ACTIVITY:** 81.4 TBq/mmol  
2200.0 Ci/mmol  
10.2 MBq/ $\mu$ g  
275  $\mu$ Ci/ $\mu$ g

**CONCENTRATION:** 1.47 MBq/ml  
39.8  $\mu$ Ci/ml

**RADIOCHEMICAL PURITY:**  $\geq$  95%

**MOLECULAR WEIGHT:** ~8000

**PACKAGING:** [<sup>125</sup>I]-SDF-1 $\alpha$  is in a solution containing 0.05M sodium acetate, 5% sucrose, 0.25% BSA, at pH 4.2. It is shipped on dry ice.

**STABILITY AND STORAGE:** [<sup>125</sup>I]-SDF-1 $\alpha$  should be stored at -20°C or lower. Under these conditions the product is stable and usable for at least six weeks after fresh lot date. Aliquoting is recommended to avoid multiple freeze/thaw cycles of vial contents.

**SPECIFIC ACTIVITY:** The initial specific activity of [<sup>125</sup>I]-SDF-1 $\alpha$  is 2200 Ci/mmol (81 TBq/mmol), 275 $\mu$ Ci/ $\mu$ g (10.2MBq/ $\mu$ g). Preparative HPLC separates unlabeled SDF-1 $\alpha$  from [<sup>125</sup>I]-SDF-1 $\alpha$ . Upon decay, [<sup>125</sup>I]-SDF-1 $\alpha$  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 <sup>125</sup>I decay and decay catastrophe of <sup>125</sup>I labeled compounds are available.<sup>1-5</sup>

**RADIOCHEMICAL PURITY:** Initially less than 5% unbound iodide as determined by reverse phase HPLC chromatography.

**PREPARATIVE PROCEDURE:** Human recombinant SDF-1 $\alpha$ , obtained from PeproTech, Inc., Rocky Hill, NJ, is radioiodinated with no carrier added <sup>125</sup>I using a lactoperoxidase procedure and is purified by reversed phase HPLC. This method predominantly labels tyrosine residues.

**AVAILABILITY:** [<sup>125</sup>I]-SDF-1 $\alpha$  is routinely available from stock and is prepared fresh and packaged for shipment on the third Monday of each month. Please inquire for larger package sizes.

## Package Size Information

Package Size as of 22-Nov-2024	Volume
185 kBq 5 $\mu$ Ci	0.20 ml
925 kBq 25 $\mu$ Ci	1.00 ml

**APPLICATIONS:** SDF-1 $\alpha$  acts at the CXCR4 (fusin or LESTR) receptor.<sup>6</sup> <sup>125</sup>I-SDF-1 $\alpha$  competes with SDF-1 $\alpha$  in CXCR4 receptor binding assays.<sup>7</sup>

**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 and 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 1160 (1984).
3. Loring, R.H., Jones, S.W., Matthews-Bellinger, J., Salpeter, M.M., *J. Biol. Chem.* 257 1418 (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. Bleul, C.C., Wu, L., Hoxie, J.A., Springer, T.A., Mackay, C.R., *Proc. Natl. Acad. Sci. USA* 94 1925-1930 (1997).
7. Hesselgesser, J., Halks-Miller, M., DelVecchio, V., Peiper, S.C., Hoxie, J., Kolson, D.L., Taub, D., Horuk, R., *Current Biology* 7 112-121 (1997).

## 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	.977	.955	.933	.912	.891	.871	.851	.831	.812
20	.794	.776	.758	.741	.724	.707	.691	.675	.660	.645
40	.630	.616	.602	.588	.574	.561	.548	.536	.524	.512
60	.500	.489	.477	.467	.456	.445	.435	.425	.416	.406
80	.397	.388	.379	.370	.362	.354	.345	.338	.330	.322
100	.315	.308	.301	.294	.287	.281	.274	.268	.262	.256
120	.250	.244	.239	.233	.228	.223	.218	.213	.208	.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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