

## Data Sheet

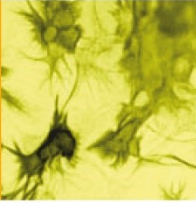
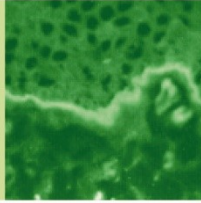
# PROTRANSDUZIN® (PTD)

## SYNTHETIC

<b>Catalog no.:</b>	A 2115AG.4
<b>Name:</b>	Protransduzin® (PTD)
<b>Sequence:</b>	QCKIKQIINMWQ
<b>MW:</b>	1532.8 Da
<b>Source:</b>	Synthetic
<b>Purity:</b>	> 90% (HPLC)
<b>Peptide content:</b>	60.3%, lyophilized from 0.1% trifluoroacetic acid / 40% acetonitrile (capillary gas chromatography)
<b>Appearance:</b>	White powder
<b>Contents:</b>	1 mg (lyophilized) Resuspend in DMSO to obtain stock solution at 10 mg/ml
<b>Store at:</b>	-20°C (lyophilized) until expiry date; -20°C (dissolved in DMSO at 10 mg/ml for 1 week). Use immediately after further dilution.
<b>Known applications:</b>	Retro- and lentiviral gene transfer, concentration of viral particles by brief low speed centrifugation.
<b>Procedure:</b>	Perform all of the following steps under sterile conditions.

### Retro- and lentiviral transduction into adherent and suspension cells<sup>1</sup>

1.	Dissolve PTD peptide in DMSO to a concentration of 10 mg/ml (PTD stock solution).
2.	Dilute the PTD stock solution 10-fold with PBS or medium (without FCS) to 1 mg/ml (PTD working solution). Vortex for 2 seconds.
3.	Add freshly prepared PTD working solution to the virus stock of interest to obtain a concentration of 10–50 µg/ml PTD and resuspend twice.
4.	Incubate 5 min at room temperature.
5.	Inoculate cells with the PTD/virus mixture.
6.	Cultivate cells under standard conditions. Optionally, cell culture medium can be exchanged after 4 hours of incubation.



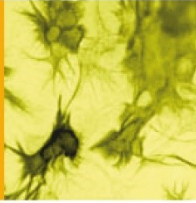
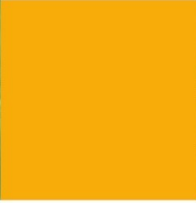
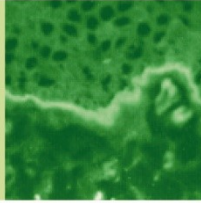
### Concentration of retro- and lentiviral vectors<sup>1</sup>

1.	Dissolve PTD peptide in DMSO to a concentration of 10 mg/ml (PTD stock solution).
2.	Dilute the PTD stock solution 10-fold with PBS or medium (without FCS) to 1 mg/ml (PTD working solution). Vortex for 2 seconds.
3.	Add freshly prepared PTD working solution to the virus stock to obtain a concentration of 10 µg/ml PTD.
4.	Resuspend PTD/virus solution twice.
5.	Incubate 5 min at room temperature.
6.	Centrifuge PTD/virus solution at 5 000–10 000 g for 5 min at room temperature.
7.	Carefully remove supernatant using a pipette, and resuspend the PTD/virus pellet in 1/10 of the original volume using the medium or buffer of choice.
8.	Inoculate cells with the concentrated PTD/virus mixture. Final concentrations of PTD in cell culture should not exceed 50 µg/ml.

### Reference:

1. Yolamanova M, Meier C, Shaytan AK, Vas V, Bertocini CW, Arnold F, Zirafi O, Usmani SM, Muller JA, Sauter D, Goffinet C, Palesch D, Walther P, Roan NR, Geiger H, Lunov O, Simmet T, Bohne J, Schrezenmeier H, Schwarz K, Standker L, Forssmann WG, Salvatella X, Khalatur PG, Khokhlov AR, Knowles TP, Weil T, Kirchhoff F, Munch J (2013). Peptide nanofibrils boost retroviral gene transfer and provide a rapid means for concentrating viruses. *Nat Nanotechnol* **8**(2): 130-136.
2. Meier C, Weil T, Kirchhoff F, Münch J (2014). Peptide nanofibrils as enhancers of retroviral gene transfer. *Wiley Interdiscip Rev Nanomed Nanobiotechnol* **6**(5):438-51.
3. Cai Y, Laustsen A, Zhou Y, Sun C, Anderson MV, Li S, Ulbjerg N, Luo Y, Jakobsen MR, Mikkelsen JG (2016). Targeted, homology-driven gene insertion in stem cells by ZFN-loaded 'all-in-one' lentiviral vectors. *Elife*. 5:e12213.
4. Okada M, Chikuma S, Kondo T, Hibino S, Machiyama H, Yokosuka T, Nakano M, Yoshimura A (2017). Blockage of Core Fucosylation Reduces Cell-Surface Expression of PD-1 and Promotes Anti-tumor Immune Responses of T Cells. *Cell Rep*. **20**(5):1017-1028.
5. Okada M, Kanamori M, Someya K, Nakatsukasa H, Yoshimura A (2017). Stabilization of Foxp3 expression by CRISPR-dCas9-based epigenome editing in mouse primary T cells. *Epigenetics Chromatin* **10**: 24.
6. Rode S, Hayn M, Röcker A, Sieste S, Lamla M, Markx D, Meier C, Kirchhoff F, Walther P, Fändrich M, Weil T, Münch J (2017). Generation and Characterization of Virus-Enhancing Peptide Nanofibrils Functionalized with Fluorescent Labels. *Bioconjug Chem*. **28**(4):1260-1270.
7. Rocker A, Roan NR, Yadav JK, Fandrich M, Munch J (2018). Structure, function and antagonism of semen amyloids. *Chem Commun (Camb)* **54**: 7557-7569.
8. Kaygisiz K, Synatschke CV (2020). Materials promoting viral gene delivery. *Biomater Sci* **8**: 6113-6156.
9. Schütz D, Read C, Groß R, Röcker A, Rode S, Annamalai K, Fändrich M, Münch J (2021). Negatively Charged Peptide Nanofibrils from Immunoglobulin Light Chain Sequester Viral Particles but Lack Cell-Binding and Viral Transduction-Enhancing Properties. *ACS Omega*. **6**(11):7731-7738.

Antigens



10. Sieste S, Mack T, Lump E, Hayn M, Schütz D, Röcker A, Meier C, Kaygisiz K, Kirchhoff F, Knowles TPJ et al (2021). Supramolecular Peptide Nanofibrils with Optimized Sequences and Molecular Structures for Efficient Retroviral Transduction. *Advanced Functional Materials* 31.

11. Vimond N, Lasselin J, Anegon I, Guillonnet C, Bézie S (2021). Genetic engineering of human and mouse CD4+ and CD8+ Tregs using lentiviral vectors encoding chimeric antigen receptors. *Mol Ther Methods Clin Dev.* 20:69-85.

12. Ciprut S, Berberich A, Knoll M, Pusch S, Hoffmann D, Furkel J, Ward Gahlawat A, Kahlert-Konzelmann L, Sahm F, Warnken U et al (2022). AAMP is a binding partner of costimulatory human B7-H3. *Neurooncol Adv* 4: vdac098.

**Last updated on:** 21 March 2024

**For research use only**

**Publishing research using A 2115AG? Please let us know so that we can cite your publication as a reference.**



**Immundiagnostik AG**

Stubenwald-Allee 8a · 64625 Bensheim · Germany

Phone: +49 6251 70190-0 · Fax: +49 6251 70190-363 · dept.immuochemicals@immundiagnostik.com · www.immundiagnostik.com