

March 21st, 2024

PeptiGrowth Inc.

PeptiGrowth Inc. is Launching a Novel Synthetic Peptide TPO-alternative peptide (TPOR agonist)

PeptiGrowth Inc. (Headquarters: Chiyoda-ku, Tokyo, President: Jiro Sugimoto) has successfully developed a novel synthetic peptide called “TPO alternative peptide (TPOR agonist)” which has equivalent function to recombinant TPO (Thrombopoietin). This product will be on the market at the end of March 2024.

Development of Synthetic Peptide Growth Factors by PeptiGrowth

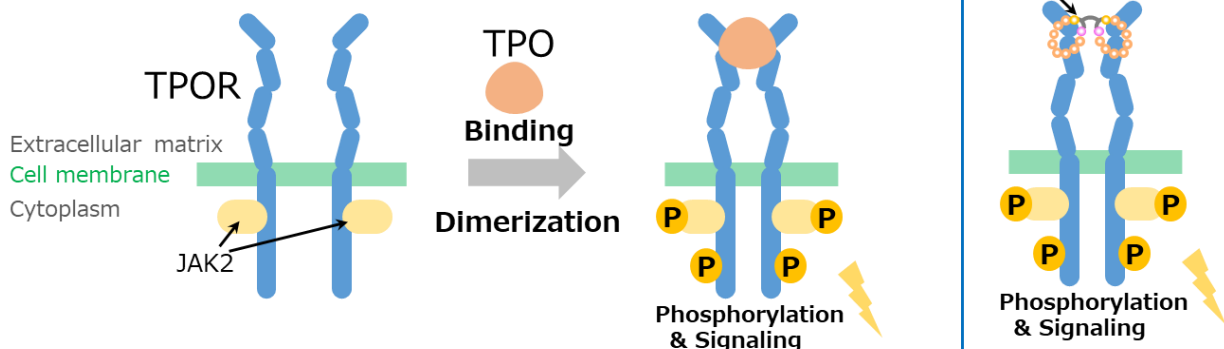
Conventional growth factors and cytokines used in the manufacturing of regenerative medicine and cell therapy products face various quality challenges such as lot-to-lot variation, potential contamination with biological impurities, low stability, and high cost. PeptiGrowth has been working on the development of a series of synthetic peptides that can address these challenges while maintaining equivalent function to the conventional growth factors and cytokines on the market. Our peptides are completely chemically synthesized and animal component-free, enabling Xeno-free and chemically defined cell culture media.

About TPO alternative peptide (TPOR agonist) [Product code: PG-010]

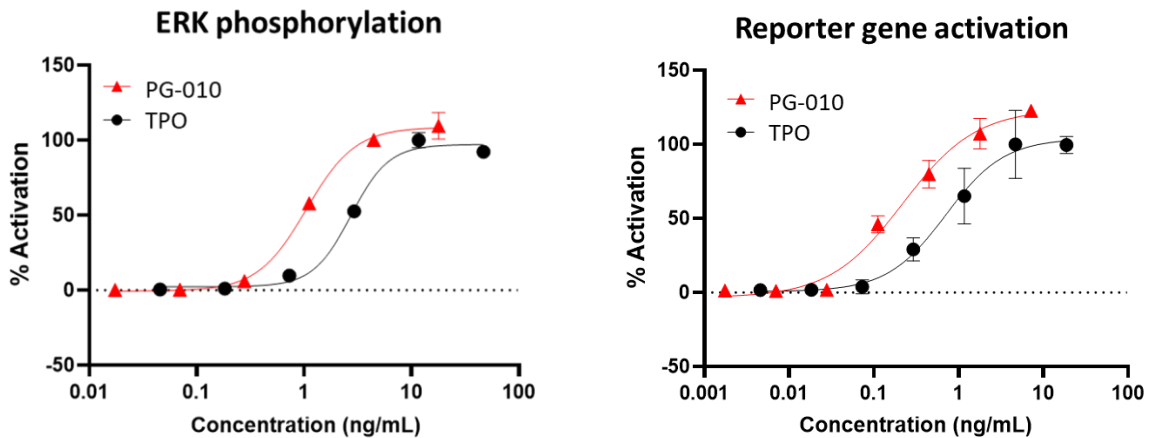
➤ Mechanism of activating thrombopoietin receptor (TPOR) by the TPO alternative peptide (PG-010)

The TPO alternative peptide (PG-010) is a dimer peptide composed of cyclic peptides that bind to thrombopoietin receptor (TPOR). Similar to TPO (thrombopoietin), it induces dimerization of TPOR and demonstrates agonistic activity towards the TPO signaling pathway through activation of JAK2 (Janus Kinase 2) (see diagram below).

Similar to TPO(Thrombopoietin), PG-010 exerts its biological activity by binding to TPOR and inducing dimerization.



➤ TPO signaling pathway activation is similar to recombinant TPO



We conducted a comparative study of the functions of TPO alternative peptide (PG-010) and commercially available recombinant TPO. We confirmed that the TPO alternative peptide has the ability to activate ERK, located downstream of the TPO signaling pathway similar to recombinant TPO (upper left figure). Furthermore, we evaluated activation of the JAK2-STAT5 signaling pathway using a reporter assay, which showed that the TPO alternative peptide can activate the JAK2-STAT5 signaling pathway similar to TPO (upper right figure). Additionally, as a functional evaluation against human hematopoietic stem cells (HSCs), the proliferative ability and undifferentiated maintenance ability of CD34+ cells were evaluated. The results confirmed that the TPO alternative peptide has similar proliferative activity and undifferentiated maintenance ability for CD34+ cells as TPO.

We anticipate that the TPO alternative peptide (PG-010) can be utilized in regenerative medicine and cell therapy fields, particularly in applications such as proliferation and maturation of megakaryocytes for platelet production, differentiation of HSCs from pluripotent stem cells, proliferation of HSCs, and manufacturing of allogeneic CAR-T cells.

➤ Product Overview

Product name:	TPO alternative peptide (TPOR agonist)
Product code:	PG-010
Product form:	Lyophilized
Storage conditions:	-20°C or less
Purity:	≥95% by HPLC
Molecular weight:	7148.02 (Acetate)
Size:	25 µg (volume per glass vial)

*This product can be provided with an Animal Component Free (ACF) certificate.

*This product is for testing and research use only (RUO).

*There is a possibility that the specifications can change.

➤ Purchase Our Product

If you would like to purchase our products, please contact us using the information below.

For customers who would like to purchase GMP compliant products as well as the above PG products in bulk scale, please contact us using the information below.

Development of other peptides from PeptiGrowth

We have developed alternative peptides targeting numerous growth factors and cytokines. To date, we have launched 10 products and plan to launch several additional growth factor alternative peptides targeting PDGF-AA, FGF2, KGF, etc. from the 2nd quarter of 2024 to the 1st half of 2025. Details will be updated on our website. If you are interested, please contact us using the following contact information.

Contact Information

PeptiGrowth Inc.

Tel : + 81-(0)70-4503-1497

E-mail: contact@peptigrowth.com