

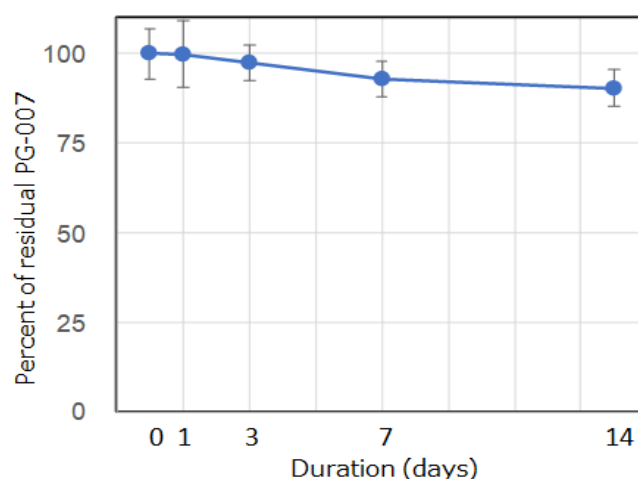
VEGF Alternative (VEGFR2 agonist) Peptide [PG-007] 14days Stability in Cell Culture Medium at 37°C

Vascular endothelial growth factor (VEGF) is an essential growth cytokine for endothelial cells, and not only functions as a cell mitogen, but also promotes cell migration, survival, angiogenesis and vasculogenic process. It promotes lumen formation and increases vascular permeability [1]. VEGF is known to have a series of its related molecules (collectively designated as VEGF family), all of which form dimers and bind to one or more of 3 types of receptor tyrosine kinases (VEGFR1, 2 and 3) [2]. These dimeric forms of VEGFs have been shown to modulate cellular functions by inducing receptor dimerization, autophosphorylation, and intracellular signaling upon binding to these receptors [3].

The N-terminal region of VEGF binds to each of the receptors listed above, but **when stored under neutral pH conditions, some amino acid residues in this domain may be modified, such as deamidation or oxidation, possibly causing self-degradation** [4]. Therefore, for a long-time culture, the culture should be replaced with fresh medium frequently depending on the used cells type and experimental conditions.

All the growth factor alternative peptides from Peptirowth have unique cyclic structure understood to be structurally stable and are expected to be stable in the cell culture media [5]. At this testing, time-dependent changes of VEGF alternative peptide "PG-007" concentrations in a liquid medium under standard cell culture conditions (at 37°C) were determined, demonstrating the **PG-007 concentration was apparently maintained as over 80% even after 2 weeks** (see below).

Changes in PG-007 concentration (initial value set as 100%)



- **Method:** PG-007 (final concentration: 100 nM) was added into **the liquid medium (commercially available DMEM/F-12)** and maintained at **37° C for 14 days**. Relative concentrations of PG-007 were measured by LC/MS system at several points (at 0, 1, 3, 7, and 14 days).
- **Result:** Concentrations were shown as maintained at **80% or higher even after 14 days under normal cell culture conditions** (N=3, mean \pm SD, in the upper graph).

Application Note

- References:

- 1) Ribatti D. Mech Dev. 2019; 160: 103579.
- 2) Shibuya M. Endothelium. 2006; 13: 63-69.
- 3) Shibuya M. Cold Spring Harb Perspect Biol. 2013; 5: a009092.
- 4) Goolcharran C, *et al.* AAPS PharmSci. 2000; 2: E5.
- 5) Nature Portfolio 2022. [A growing market for synthetically produced peptides \(nature.com\)](https://www.nature.com)

- Precautions regarding the product:

- Please read the Safety Data Sheet (SDS) carefully prior to use the product.
- To use this product immediately after dissolving is recommended.
- This product is a reagent for research use only. Not to use for any purpose other than research or investigational use.
- Specifications, contents, appearances, etc. of this product may be changed without notice.
- Contact us or our sales agents, if with any large amounts or other special specification

Product lineup

Product code	Factor Name
PG-001	HGF alternative peptide
PG-002	TGFβ1 inhibitor
PG-003	BDNF alternative peptide
PG-004	Noggin -like peptide
PG-005	BMP7 selective inhibitor
PG-006	BMP4 selective inhibitor
PG-007	VEGF alternative peptide
PG-008	Wnt3a alternative peptide
PG-009	Synthetic EGF (human)
PG-010	TPO alternative peptide

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