Application Note

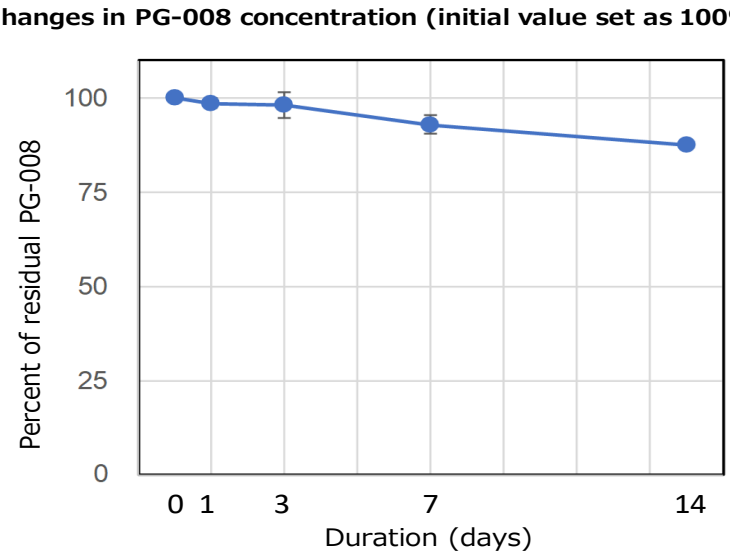
PeptiGrowth

Wnt3a Alternative Peptide [Product ID: PG-008]
14days Stability in Cell Culture Medium at 37℃

Wnt proteins are secreted glycoproteins to control multiple processes of embryonic development and adult homeostasis and constitute a family of 19 molecular species [1, 2]. As one molecule in the family, Wnt3a is thought to play an important role in acting on pluripotent stem cells and maintaining the integrity of embryonic and adult tissues [3].

In general, Wnt proteins are lipidated and highly hydrophobic, so they can be isolated only in the solution containing some detergents, which eliminate their utilization in various biological tests. In addition, isolated and purified Wnt proteins become structurally unstable even under detergent-containing conditions and tend to lose their biological activity within 24 hours under standard cell culture conditions at 37°C [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 PeptiGrowth 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 Wnt3a alternative peptide "PG-008" concentrations in a liquid medium under standard cell culture conditions (at 37°C) were determined, demonstrating the **PG-008 concentration was apparently maintained as over 80% even after 2 weeks** (see below).



- **Method**: PG-008 (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-008 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 ± SD, in the upper graph).

- References:

1) Logan CY, Nusse R. Annu Rev Cell Dev Biol. 2004; 20: 781-810.
2) Saito-Diaz K, *et al.* Growth Factors. 2013; 31: 1-31.
3) Lu J, *et al.* Proc Natl Acad Sci U S A. 2006; 103: 5688-5693.
4) Dhamdhere GR, *et al.* PLoS One. 2014; 9: e83650.
5) Nature Portfolio 2022. A growing market for synthetically produced peptides (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**

《Contact regarding PeptiGrowth's products and application notes》

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