Human Recombinant phospho-Ubiquitin (Ser65)

Cat. # SI-0301P

Background: PINK1 (PTEN-induced putative kinase protein 1) is crucial in the cellular process of protecting cells from stress-induced mitochondrial dysfunction. Healthy mitochondria have a normal membrane potential that allows PINK1 to be recruited and subsequently cleaved on the mitochondrial membrane. However, damaged mitochondria present an abnormal mitochondria membrane potential, which allows PINK1 to accumulate on the outer membrane[1]. The stabilized PINK1 on the outer mitochondrial membrane recruits the Parkin E3 Ligase (PARK2), phosphorylating Parkin on Ser65 of its UBL domain, partially activating it. PINK1 also phosphorylates numerous other proteins, including ubiquitin on Ser65. Binding of pSer65-Ub to phosphorylated Parkin fully activates Parkin[2]. This signaling cascade is crucial in the cellular process of clearing damaged mitochondria, known as the process of mitophagy.

Human recombinant ubiquitin is produced in E. coli, phosphorylated by Serine/Threonine kinase PINK1, and purified to >95% homogeneity. This protein contains no extraneous tags.

Application: For use in investigating and research of the Parkin and PINK1 pathway and/or drug discovery.

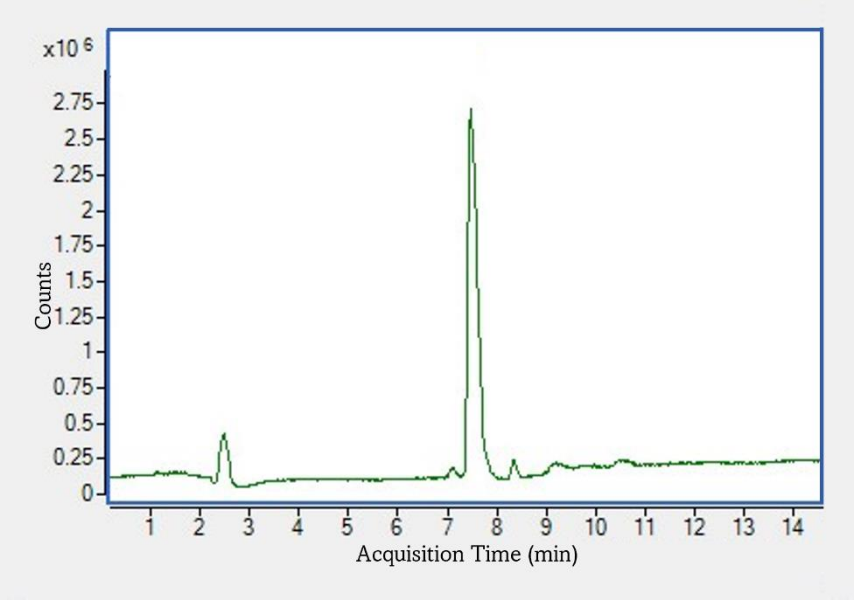
Product Information

Purity:	≥ 95% by HPLC-MS
Molecular Weight:	8,646.9 Da
Physical State:	Liquid, 50 mM Tris, pH 7.5, 0.15 M NaCl
Quantity:	x _g
Solubility:	>30 mg/mL
Storage:	-80° C. Avoid repeated freeze/thaw cycles

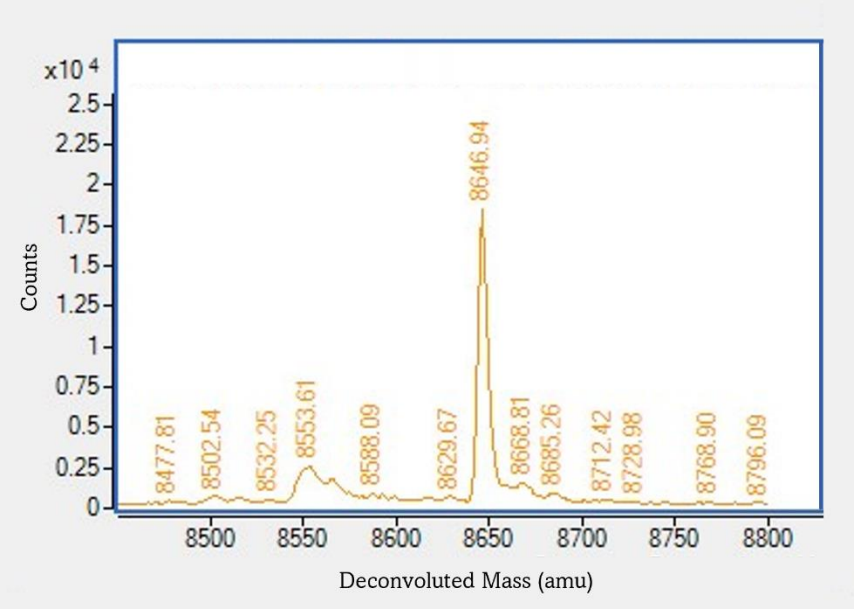
References

1. Ciechanover, A. (**2003**) "The ubiquitin proteolytic system and pathogenesis of human diseases: a novel platform for mechanism-based drug targeting." *Biochem Soc Trans* 31(2): 474-81.
2. Marblestone, J.G., Kumar, K.G., Eddins, M.J., Leach C.A., Sterner, D.E., Mattern, M.R., Nicholson, B. (2010) Novel Approach for Characterizing Ubiquitin E3 Ligase Function. *J Biomol Screen* (In Press).

Data



HPLC



Deconvoluted Mass Spectrum