

Lot # XXXXX

## MATERIAL DATA SHEET

### Parkin, pS65, human recombinant Cat. # E3-166

The E3 Ubiquitin ligase Parkin (encoded by the PARK2 gene) is an essential part of the cellular machinery that participates in the removal of damaged mitochondria. Mutations in PARK2 are known to cause a form of Parkinson's disease known as autosomal recessive juvenile Parkinson's disease (AR-JP), and the mechanisms by which defective Parkin ligase contributes to the dopaminergic cell death in this disease is an area of intense investigation.

Reported substrates for Parkin include BCL2, GPR37, MIRO1, MFN1, MFN2, TOMM20, USP30, and many others. Parkin (an RBR-class Ubiquitin ligase) structures have recently been reported by multiple groups, and reveal that the ligase is folded upon itself to produce an auto-inhibited state. The auto-inhibition is relieved by interactions with PINK1 kinase (which can phosphorylate both Parkin and Ubiquitin at serine residue number 65) and pS65 phospho-Ubiquitin by mechanisms that are under investigation.

*In vitro*, Parkin may be activated by treatment with recombinant PINK1, or addition of low concentrations of pS65-phosphoubiquitin. Parkin has been reported to generate poly-Ubiquitin chains in K6, K11, K48, and K63 linkages both *in vitro* and *in vivo*. This recombinant protein is phosphorylated on serine 65, and is untagged.

#### Product Information

<b>Quantity:</b>	25 µg
<b>Stock:</b>	X mg/ml (X µM) in 25 mM Tris-HCl pH 8.5, 200 mM NaCl, 0.03% Brij35, 10% (v/v) Glycerol, 5 mM TCEP
<b>MW:</b>	52 kDa
<b>Purity:</b>	≥ 90% by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie Blue Stain.

#### Use & Storage

<b>Use:</b>	Reaction conditions will need to be optimized for each specific application. Unlike wild-type unphosphorylated Parkin, Parkin pS65 has substantial ligase activity in the absence of added activators as determined by its ability to autoubiquitinate, and its ability to ubiquitinate a Miro/Rhot1 substrate ( <b>SP-490</b> )
<b>Storage:</b>	Store at -80°C. Avoid multiple freeze/thaw cycles.

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**Literature**

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