



Europa Bioproducts Ltd

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## SulfoBiotics- Protein Redox State Monitoring Kit

Item# Unit Size  
SB11-10 5 samples



Storage Condition: 0-5°C  
Shipping Condition: Ambient temperature

### Product Description:

Protein thiol is a major redox signaling in the cellular processes. Modification of protein thiol by oxidative stress associates with the redox state in the cells. The approach of this kit is detecting the number of thiol residues accurately in order to study the redox state in oxidative stress environment.

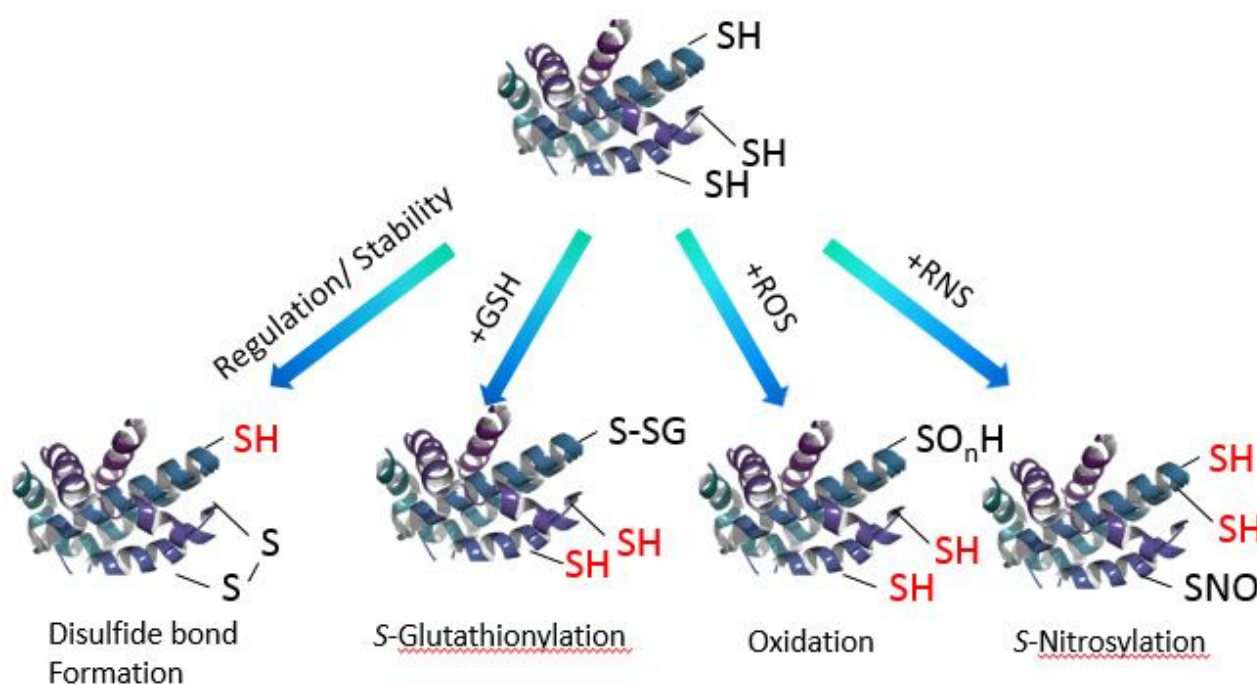


Fig. 1 Redox States of Thiol group(s) in Protein



CERTIFICATE NO. 32423

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Registered Number: 2703381

**Mechanism of Thiol Modification with Protein-SHifter:**

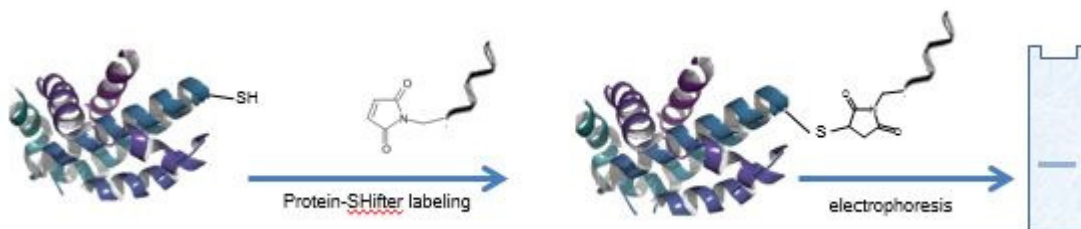


Fig. 2 Maleimide group of the Protein-SHifter binds to a free thiol group of a protein. The conjugate consists of a unique molecular weight that clearly visualized in electrophoresis.

**Visualization of Redox State of Thiol Residues in a Protein:**

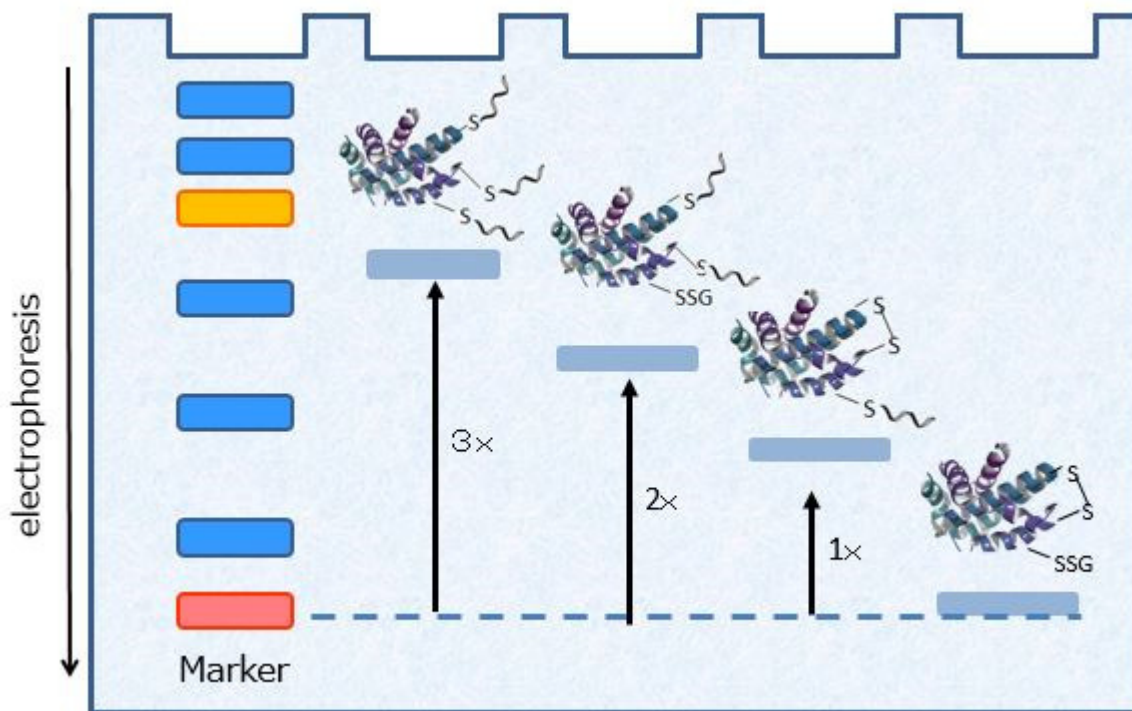


Fig. 3 One molecule of Protein-SHifter binds to one molecule of free-thiol in protein. The number of the conjugation is directly proportional to the number of free thiol as clear band-shift.

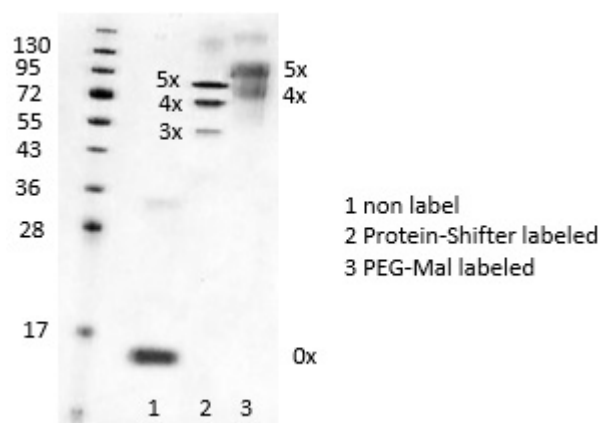
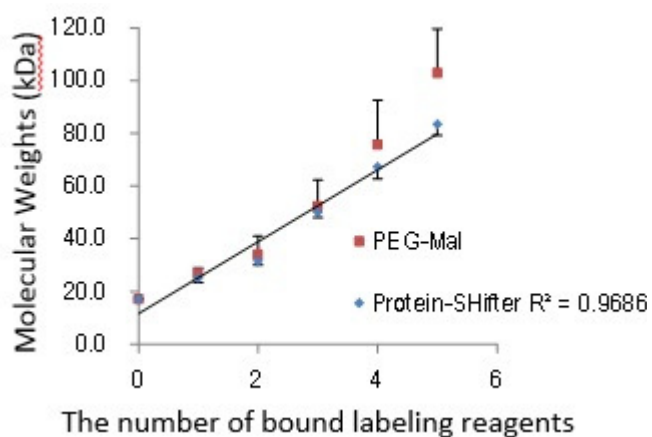


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### Comparison Data:

- Linearity of mobility shifts derived from Protein SHifter comparing with PEG-Maleimide (PEG-Mal)
- Clear band-shift observed from Protein SHifter comparing with PEG-Mal.



\*Conjugation with Thioredoxin

### References:

- 1) Satoshi Hara, Tatsuya Nojima, Kohji Seio, Masasuke Yoshida, Toru Hisabori. "DNA-maleimide: An improved maleimide compound for electrophoresis-based titration of reactive thiols in a specific protein" *Biochimica et Biophysica Acta*, **2013**, 1830(4) 3077.
- 2) Satoshi Hara, Yuki Tatenaka, Yuya Ohuchi, Toru Hisabori, "Direct determination of the redox status of cysteine residues in proteins *in vivo*". *Biochimica et Biophysica Research Communications*. **2014**, In Press.



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