

Targeting Talk: Product Q&A

Q: Our QA group wants to know about the safety of the toxin in your conjugates? What precautions should we take in handling saporin products?

A: Saporin is a Type 1 ribosome-inactivating protein (RIP), due to its N-glycosidase activity, from the seeds of *Saponaria officinalis*. It was first described by Fiorenzo Stirpe and his colleagues in 1983 in an article that illustrated the unusual stability of the protein.¹ Among the RIPs are some of the most toxic molecules known, including ricin and abrin (the latter is the poison preferred by the characters in movie *The Blue Lagoon*). These toxins contain a second protein strand that inserts the RIP into a cell, making it able to enzymatically inactivate the ribosomes, shutting down protein synthesis and resulting in cell death, and eventually causing death of the victim.

Saporin does not possess a cell-binding chain² and has no method of internalization without a targeting agent to escort it into a cell. It is this fact that also adds to the safety of its use in the lab. Autoclaving or exposure to 0.2 M NaOH is sufficient to decontaminate material that has been in contact with


Saporin and its conjugates. The LD₅₀ for Saporin in mice is 4-8 mg/kg;³ this dosage amount would be insignificant in humans. Hundreds of articles in the scientific literature (search "Saporin" in Pub Med) have demonstrated tremendous specificity in targeting neuronal cells with many different Saporin conjugates and by many different scientists.

REFERENCES

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South Korea

 JYSCO Ltd.
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gu
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int@jysco.com


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Europe


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 Sungwoo Life
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Uijeongbu City, Kyungki Do
480-849 Korea
tech.support@sungwools.com


Taiwan

 Shun Xin Biotech
No.9-2, Aly.28, Ln.75
Guotai St, Banqiao Dist.
New Taipei City, Taiwan
sunny@sunshine-biotech.com.tw


Canada

 Cedarlane Laboratories
4410 Paletta Court
Burlington, ON L7L5R2
CANADA
general@cedarlanelabs.com

Japan

 Funakoshi Co
9-7 Hongo 2-
chome, Bunkyo-ku
Tokyo 113-0033 JAPAN
reagent@funakoshi.co.jp

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 i-DNA
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