## Isoalantolactone

## Item No. 33838

CAS Registry No.: 470-17-7

Formal Name: $\quad$| (3aR,4aS,8aR,9aR)-decahydro- |
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| 8a-methyl-3,5-bis(methylene)- |
| naphtho[2,3-b]furan-2(3H)-one |

Synonyms: (+)-Isoalantolactone, NSC 241036
MF:
$\mathrm{C}_{15} \mathrm{H}_{20} \mathrm{O}_{2}$
FW: 232.3
Purity: $\quad \geq 98 \%$
Supplied as: A solid
Storage: $\quad-20^{\circ} \mathrm{C}$
Stability: $\quad \geq 4$ years
Item Origin: Plant/Aucklandia lappa Decne
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

## Laboratory Procedures

Isoalantolactone is supplied as a solid. A stock solution may be made by dissolving the isoalantolactone in the solvent of choice, which should be purged with an inert gas. Isoalantolactone is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of isoalantolactone in these solvents is approximately 1,10 , and $15 \mathrm{mg} / \mathrm{ml}$, respectively.

## Description

Isoalantolactone is a sesquiterpene lactone that has been found in Inula and has diverse biological activities. ${ }^{1-4}$ It inhibits the proliferation of PANC-1, BxPC-3, and HPAC pancreatic cancer cells $\left(\mathrm{IC}_{50} \mathrm{~s}=40,43\right.$, and $48 \mu \mathrm{M}$, respectively), as well as induces apoptosis, cell cycle arrest at the $S$ phase, and the production of reactive oxygen species (ROS) in PANC-1 cells. ${ }^{2}$ Isoalantolactone ( 4 and $8 \mu \mathrm{M}$ ) decreases LPS-induced production of nitric oxide (NO), prostaglandin $E_{2}$ (PGE ${ }_{2}$; Item No. 14010), IL-6, and TNF-a in RAW 264.7 macrophages. ${ }^{3}$ It reduces the production of $S$. aureus $\alpha$-toxin in a concentration-dependent manner and increases survival in a mouse model of $S$. aureus-induced pneumonia when administered at a dose of $50 \mathrm{mg} / \mathrm{kg}$. ${ }^{4}$

## References

1. Konishi, T., Shimada, Y., Nagao, T., et al. Antiproliferative sesquiterpene lactones from the roots of Inula helenium. Biol. Pharm. Bull. 25(10), 1370-1372 (2002).
2. Khan, M., Ding, C., Rasul, A., et al. Isoalantolactone induces reactive oxygen species mediated apoptosis in pancreatic carcinoma PANC-1 cells. Int. J. Biol. Sci. 8(4), 533-547 (2012).
3. He, G., Zhang, H., Chen, Y., et al. Isoalantolactone inhibits LPS-induced inflammation via NF-kB inactivation in peritoneal macrophages and improves survival in sepsis. Biomed. Pharmacother. 90, 598-607 (2017).
4. Qiu, J., Luo, M., Wang, J., et al. Isoalantolactone protects against Staphylococcus aureus pneumonia. FEMS Microbiol. Lett. 324(2), 147-155 (2011).
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[^0]:    WARNING
    THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

    ## SAFETY DATA

    This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

