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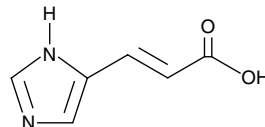
Product Information



trans-Urocanic Acid

Item No. 16228

CAS Registry No.: 3465-72-3
Formal Name: 3-(1H-imidazol-5-yl)-2E-propenoic acid
MF: C₆H₆N₂O₂
FW: 138.1
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 286 nm



Laboratory Procedures

For long term storage, we suggest that *trans*-urocanic acid be stored as supplied at -20°C. It should be stable for at least two years.

trans-Urocanic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the *trans*-urocanic acid in the solvent of choice. *trans*-Urocanic acid is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of *trans*-urocanic acid in these solvents is approximately 15 and 3 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of *trans*-urocanic acid can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of *trans*-urocanic acid in PBS, pH 7.2, is approximately 0.3 mg/ml. We do not recommend storing the aqueous solution for more than one day.

trans-Urocanic acid is a major epidermal chromophore for the immunosuppressive effects of UV radiation that is produced in mammalian stratum corneum by the action of histidine ammonialyase on L-histidine.¹ It contributes to the acidification of the surface of the stratum corneum, and its function has been proposed as that of an endogenous sunscreen, endowing a low-level of protection (SPF ~ 1.5) against UV-induced DNA damage and excessive keratinocyte apoptosis.¹ Upon UVB exposure, *trans*-urocanic acid is converted to the *cis* isomer, which is known to activate regulatory T cells.²

References

1. Gibbs, N.K. and Norval, M. Urocanic acid in the skin: a mixed blessing? *J. Invest. Dermatol.* **131**(1), 14-17 (2011).
2. Schwartz, T. Mechanisms of UV-induced immunosuppression. *Keio J. Med.* **54**(4), 165-171 (2005).

Related Products

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