

## Tween 20

|                  |                            |       |          |
|------------------|----------------------------|-------|----------|
| <b>Cat. No.:</b> | HY-141415                  |       |          |
| <b>CAS No.:</b>  | 9005-64-5                  |       |          |
| <b>Target:</b>   | Biochemical Assay Reagents |       |          |
| <b>Pathway:</b>  | Others                     |       |          |
| <b>Storage:</b>  | Pure form                  | -20°C | 3 years  |
|                  |                            | 4°C   | 2 years  |
|                  | In solvent                 | -80°C | 6 months |
|                  |                            | -20°C | 1 month  |

Polyoxyethylene sorbitan monolaurate

### SOLVENT & SOLUBILITY

|                 |  |
|-----------------|--|
| <b>In Vitro</b> | DMSO : 50 mg/mL (ultrasonic and warming and heat to 60°C)  |
| <b>In Vivo</b>  | 1. Add each solvent one by one: 10% DMSO >> 90% corn oil<br>Solubility: ≥ 1.67 mg/mL (Infinity mM); Clear solution |

### BIOLOGICAL ACTIVITY

|                    |  |
|--------------------|--|
| <b>Description</b> | Tween 20 (Polysorbate 20) is a polyoxyethylene (POE)-type nonionic surfactant <sup>[1][2][3]</sup> .   |
| <b>In Vitro</b>    | <p>Addition of Tween 20 can modify lignin surface properties to change its hydrophobicity, hydrogen bonding ability and surface charges, thus reducing the non-productive adsorption of proteins<sup>[1]</sup>.</p> <p>Tween 20 (0.35%-0.7% w/w) added to 0.05 mol/L of phosphate buffer pH 6.5 dramatically increased the apparent solubility of the drug from 0.8 µg/ml even to 353 µg/ml, while its effect in lower pH or in water was much smaller (20 µg/ml in pH 4.5). The increased concentration of phosphate salts (0.2 mol/l) at pH 6.5 in the presence of 0.7% of Tween 20, resulted in further increase of candesartan cilexetil solubility to 620 µg/ml<sup>[2]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> |

### CUSTOMER VALIDATION

- Int J Pharm. 2023 Oct 31:123566.

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### REFERENCES

[1]. Yu-An Chen, et al. Evaluation of the action of Tween 20 non-ionic surfactant during enzymatic hydrolysis of lignocellulose: Pretreatment, hydrolysis conditions and lignin structure. Bioresour Technol. 2018 Dec;269:329-338.

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[2]. Katarzyna Hoppe, et al. The effect of polysorbate 20 on solubility and stability of candesartan cilexetil in dissolution media. AAPS PharmSciTech. 2014 Oct;15(5):1116-25.

[3]. Justyna Łuczak, et al. Micelle formation of Tween 20 nonionic surfactant in imidazolium ionic liquids. Colloids and Surfaces A: Physicochemical and Engineering Aspects. Volume 471, 20 April 2015, Pages 26-37.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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