

## Product Information

## Mucin from porcine stomach

Type III, bound sialic acid 0.5-1.5%, partially purified powder

**M1778**

### Product Description

CAS Registry Number: 84062-64-4

Mucins are highly glycosylated proteins that occur in mucus and the mucous membranes of animals and humans. The principal glycoprotein component of mucus, mucins are associated with such organs as the abdomen and the stomach. Their high degree of glycosylation renders mucins highly stable to digestion in acidic *in vivo* environments such as gastric mucosa.

Polymeric mucin has been estimated to have a molecular mass of ~4,000-5,500 kDa.<sup>1,2</sup> The molecular mass of mucin monomer has been estimated at ~640 kDa.<sup>2</sup> Estimates of porcine mucin composition include a carbohydrate portion of 80-84%, and a protein portion of 16-20%.<sup>1-3</sup> The peptide backbone of mucin is notably rich in Pro, Ser, and Thr residues, which comprise ~43% of the amino acid composition of the mucin peptide backbone. Cys residues are prevalent in the non-glycosylated portions of mucin, and allow for crosslinking of mucin monomers to create highly complex polymers.

In porcine mucin, *O*-glycosylation occurs particularly at serine and threonine residues. The more prevalent *O*-linked glycans in porcine mucin include:<sup>3</sup>

- *N*-acetylgalactosamine
- *N*-acetylglucosamine
- Fucose
- Galactose
- *N*-acetylneuraminic acid (sialic acid)

Several studies have investigated the structural properties of porcine gastric mucin, and proposed various structural models.<sup>4-6</sup> Several theses<sup>7-9</sup> and dissertations<sup>10-16</sup> have cited use of product M1778 in their protocols.

### Reagent

This product is a partially purified powder with bound sialic acid content in the range of 0.5-1.5%, measured as *N*-acetylneuraminic acid. This product is not sterile.

### Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

### Procedure

A general procedure for sterilizing mucin has been published,<sup>17</sup> as follows:

1. Place dry powdered mucin in a flask.
2. Cover the mucin with 95% ethanol.
3. Heat the covered mucin at 70 °C for 24 hours.
4. Evaporate the alcohol to recover the mucin.

However, we have not tested this procedure ourselves.

### Storage/Stability

Store the product at 2-8 °C.

### References

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