

# Safety evaluation of the food enzyme endo-1,4- $\beta$ -xylanase from the non-genetically modified Trichoderma citrinoviride strain TCLSC

## 1 Report

**Status** Finished

**EFSA question number** [EFSA-Q-2014-00543](#)

**Adopted** 04-02-2026

**Previous authorisations** The applicant has submitted a dossier in support of the application for authorisation of the food enzyme endo-1,4- $\beta$ -xylanase from Trichoderma citrinoviride TCLSC (DSM 27790). Additional information was requested from the applicant during the assessment phase on 16 January 2024 and on 12 September 2025 and was received on 1 April 2024 and on 19 November 2025, respectively.

## 2 Production method

**Manufacturing** The production strain is grown as a pure culture using a typical industrial medium in a [...] fermentation system with conventional process controls in place.

**Formulation** Unknown

**Downstream processing** After completion of the fermentation, the solid biomass is removed by filtration. The filtrate containing the enzyme is then further purified and concentrated, including an ultrafiltration step in which enzyme protein is retained, while most of the low molecular mass material passes the filtration membrane and is discarded.

**Average TOS (w/w)** 86.2 %

**Average activity/TOS** 238.2 XU/mg TOS

## 3 EFSA tested impurities

**Production strain and recombinant DNA** The absence of viable cells of the production strain in the food enzyme was demonstrated.

**Allergenicity** When used for the production of distilled alcohols, the Panel considered that a risk of allergic reactions upon dietary exposure can be excluded. For the remaining



intended uses, the risk of allergic reactions upon dietary exposure to this food enzyme cannot be excluded, but the likelihood is low

**Antimicrobial resistance** No antimicrobial activity was detected in any of the tested batches.

**Antifoam agents** /

**Other** The presence of aflatoxins (B1, B2, G1, G2 and M1), ochratoxin A, fumonisin, zearalenone, deoxynivalenol, nivalenol, T-2 toxin, HT-2 toxin, ergocornine, ergocristine, ergocryptine, ergometrine, ergosine and ergotamine was examined in three food enzyme batches and was below the LoQ of the applied analytical methods.

**Pathogens**

**Microbiological quality indicators**

**Metals**

**Comments** LoDs: Pb = 5 mg/kg; As, Hg = 0.1 mg/kg each; Cd = 0.01 mg/kg. LoQs: aflatoxins (B1, B2, G1 and G2) = 1 µg/kg each; aflatoxin M1 = 0.4 µg/kg; ochratoxin A = 5 µg/kg; fumonisin B1 = 100 µg/kg; zearalenone = 5 µg/kg; deoxynivalenol = 25 µg/kg; nivalenol = 800 µg/kg; T-2 toxin = 10 µg/kg; HT-2 toxin = 50 µg/kg; ergocornine, ergocristine, ergocryptine, ergometrine, ergosine and ergotamine = 100 µg/kg each.