

## Certificate of Origin and Analysis for BRUKER Quality Control Strains

We declare that the following DSMZ culture

DSM-No. Strain	Batch-No.	Risk Group
DSM 1103 <i>Escherichia coli</i>	May 2017	2

√ is an authentic DSMZ culture derived directly from the strain held in the DSMZ  
√ has been produced in DSMZ laboratories at the address given below  
√ is of German preferential origin  
√ has been tested by DSMZ control procedures with respect to purity and identity

### Viability

Viability of the above batch was tested by subculturing.

### Purity

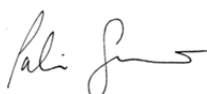
Purity of the above batch was checked after production. This check included microscopical and macroscopical observations and selected physiological, chemosystematic and molecular based tests.

### Authenticity

Authenticity of the above batch was checked by the following techniques:

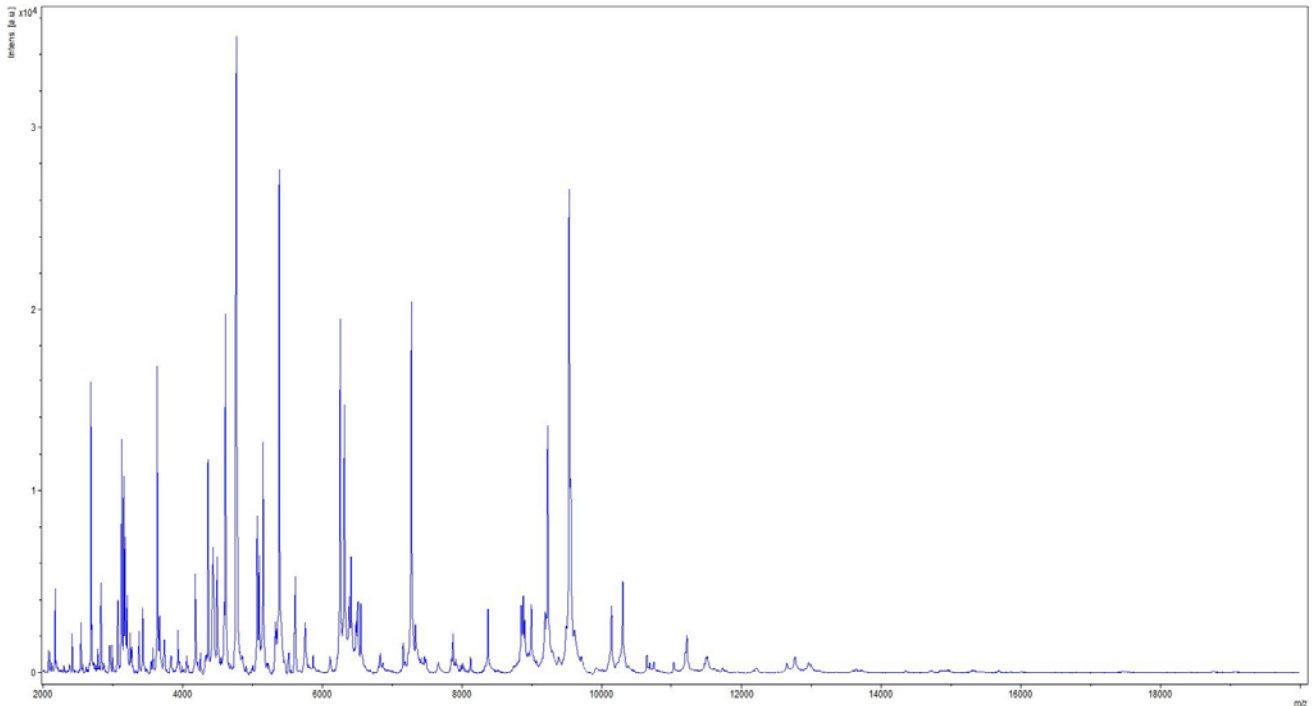
- API® (Analytical Profile Index)
- Whole cell fatty acid composition
- RiboPrinting® (molecular characterisation)
- MALDI-TOF mass spectrometry (BRUKER; see next page)

Date: June 01, 2017

A handwritten signature in black ink, appearing to read 'Sabine Gronow', is written over a light blue horizontal line.

Dr. Sabine Gronow, Leibniz-Institut DSMZ-Deutsche Sammlung  
von Mikroorganismen und Zellkulturen GmbH  
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**DSM 1103 *Escherichia coli* (May 2017)**



MALDI-TOF mass spectra acquired on a MALDI Biotyper system (microflex LT mass spectrometer) at Bruker. The respective spectrum is stored at Bruker.