

M. Biendl (Co-Chairman EBC) and
B. Foster (Co-Chairman ASBC)

New International Calibration Standard (ICS-B1) for HPLC Analysis of Beta-Acids in Beer

Submitted on behalf of the International Hop Standards Committee

The International Hop Standards Committee (IHSC) announces the release of a new calibration standard, ICS-B1, for the HPLC analysis of beta-acids in beer.

Background

The International Hop Standards Committee (IHSC) was founded to take care of the production, release, and maintenance of HPLC calibration standards for use in the quantitative determination of various bitter components in hops, hop products and in beer.

Since that time, the scope includes the International Calibration Standards (ICS)

- ICS-I (Dicyclohexylamine salts of iso- α -acids, DCHA-Iso),
- ICS-R (Dicyclohexylamine salts of rho-iso- α -acids, DCHA-Rho),
- ICS-T (Purified tetrahydroiso- α -acids, Tetra),
- ICS-H (Dicyclohexylamine salts of hexahydroiso- α -acids, DCHA-Hexa),
- ICS-Hum (Dicyclohexylamine salts of humulinones, DCHA-Humulinones),
- ICS-X (Purified xanthohumol),
- ICS-A (Dicyclohexylamine salts of α -acids, DCHA-Alpha),

as well as the International Calibration Extract

- ICE (hop extract with given contents of α -acids and β -acids).

To progress its mission, the International Hop Standards Committee worked hard to produce a new HPLC calibration standard that is now prepared and approved. This new International Calibration Standards is:

- ICS-B (Dicyclohexylamine salts of β -acids, DCHA-Beta).

The standard was evaluated for purity by HPLC, and the stability of the preparation was checked. The standard is considered stable in cold (frozen) storage for several years.

Release of ICS-B1

In 2020 the subcommittee initiated the preparation of this standard based on a paper of Maye and Leker (J. Am. Soc. Brew. Chem. 72: 227-230, 2014). The new standard was prepared in the labo-

ratories of S. S. Steiner, Inc., under the guidance of committee member, John Paul Maye. Packaging was also carried out in the same laboratory. The committee records its considerable appreciation to Jeremy Leker for all his skilled input to the successful manufacture and purification of this new standard. Following preparation, committee members conducted extensive analysis in order to validate the new standard and assign a value to the content of alpha-acids. This validation included a collaborative HPLC study in which the prospective new standard was cross-checked against the existing International Calibration Extract for Alpha- and Beta-Acids, ICE-4.

Note: This new standard, ICS-B1, now becomes the recommended standard and should be used for quality control purposes during beer production (see methods Analytica-EBC 9.47, and 9.50). This standard is for HPLC use and should never be used for sensory research or ingested.

How to Purchase

Stocks of ICS-B1 are being divided between SciSoc (ASBC) in the USA and Labor Veritas (EBC) in Switzerland. Analysts can purchase the new standard in 250 mg vials. *Orders are dispatched by express mail to minimize risk of damage in transit.

Detailed information pertaining to each standard, including full instructions for use, is available from SciSoc (ASBC) or Labor Veritas (EBC) on request and is automatically supplied with each purchase.

**Purchasers in the USA, Canada, Central and South America should contact ASBC headquarters (email: asbc@scisoc.org; tel: +1 (651) 454-7250), while those in Europe and Africa should direct enquiries to Labor Veritas, Zürich, Switzerland (email: admin@laborveritas.ch; tel: +41 (0) 44 283 29 30). Persons ordering from other parts of the world may purchase from either party.*

*Martin Biendl and Bob Foster
February 17th, 2022*