

# GDU and PU Methodologies

## SORA White Paper

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When measuring enzymatic activity, the choice of units is an extremely important factor. Some important aspects to consider pertaining to activity units are:

- Robustness
- Relevance (measuring the correct catalysis)
- Acceptance (is the unit recognized by other organizations)
- Validation (has the method undergone validation/ verification testing)
- Equipment required (no unnecessarily expensive equipment is used)

SORA Labs does not perform or support the proteolytic testing unit GDU (Gelatin Digestion Unit) for some of these reasons.

While many enzyme producers claim activity in “GDU” units, SORA Labs has observed that many companies have their own modifications of this assay, which are all labeled as GDU. This produces a situation where a single material may have different “GDU” values based upon which method was used.

SORA attempted to bring a version of this method in-house, with limited success. We discovered that the vendor / catalog number of gelatin makes a large difference in the results; we have also determined that the linearity of the assay is not acceptable.

SORA offers the plant proteolytic unit (FCC PU) as an alternate activity; it adequately addresses these issues. The method is referenced in the current versions of the United States Pharmacopoeia (USP) and Food Chemicals Codex (FCC), which are compendial, validated and universally accepted methods. It is robust and linear.

SORA has analyzed many bromelain samples sold with GDU values, and has used the following data to produce a conversion factor:

SORA Conversion Chart	
Assay Date	Conversion Acheived
2/14/2011	15.36
1/31/2011	17.56
1/11/2011	15.57
11/12/2010	15.00
11/11/2010	13.11
9/23/2010	14.55

The conversion factor is as follows:

$$1 \text{ GDU/g} = 15 \text{ PU/mg}$$

Although this conversion was developed several years ago, SORA Labs still considers this to be a reliable conversion factor. As it is still being used several times a week, this offers a reliable alternative to the GDU unit.



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