Dear user,

here, you will find a TCORE application, which is able to correctly calculate a transition temperature of protein denaturation from the ratio of fluorescence signals (in general, of any spectral signals) obtained at two different wavelengths.
The attached application note describes the problem, which the TCORE addresses and compares the common approach with the TCORE approach.

This is the first version of the TCORE, therefore we would appreciate any suggestion with the intention to improve the performance of our application and if you encounter a "bug", please, send us a detailed description of the problem to this email address: info@degbioresearch.sk. We will try to resolve the issue as promptly as possible.

The technical notes:
The data set input file should consist of three columns, temperature, fluorescence intensity signal at 330 nm and 350 nm, respectively. So far, there are supported two file formats:

(i) the .txt format where in row values are separated by a white character (space or tabulator), and
(ii) the .csv format where in row values are separated by a semicolon.

To reduce an error in determination of the transition temperature, the data set has to contain at least 100 points.

The application is provided free of charge for academic users and at this time, also for commercial users. Commercial users interested in high-throughput analysis, please, send us inquire to info@degbioresearch.sk.

In the case you will find this application useful and you will handle the data in your reports or publications according to our application, we would appreciate if you refer to our original work pointing to the issue related to the analysis of the ratio of spectral signals for evaluation of protein denaturation:

- Žoldák G, Jancura D, Sedlák E.
The fluorescence intensities ratio is not a reliable parameter for evaluation of protein unfolding transitions.
Protein Sci. 2017;26(6):1236-1239. doi: 10.1002/pro.3170.

Development team.