Superflares are flares that release total energy $10^{34}$ times greater than that of the biggest solar flares ($\sim 10^{32}$ erg). Recent Kepler-space-telescope observations found more than 1000 superflares on a few hundred solar-type stars (Maehara+2012, Nature; Shibayama+ 2013, ApJS). Such superflare stars show quasi-periodic brightness variations with the typical period of from one to a few tens of days. Such variations are thought to be caused by the rotation of the star with large starspots (Notsu+2013, ApJ). However, spectroscopic observations are needed in order to confirm whether the variation is really due to the rotation and whether superflares can occur on ordinary single stars similar to our Sun. Then we have carried out spectroscopic observations for 50 solar-type superflare stars with Subaru/HDS (Notsu+2015a&b, PASJ). As a result, more than half (34 stars) of the target stars show no evidence of binarity, and the atmospheric parameters of these stars are in the range of solar-type stars. The detailed analyses for these 34 stars show that (1) the projected rotational velocities ($v \sin i$) are consistent with the rotational velocities estimated from the brightness variations, (2) there is a correlation between the brightness variation amplitude and the intensity of Ca II IR triplet line. These support that the brightness variation discussed above is explained by the rotation of a star with large starspots.