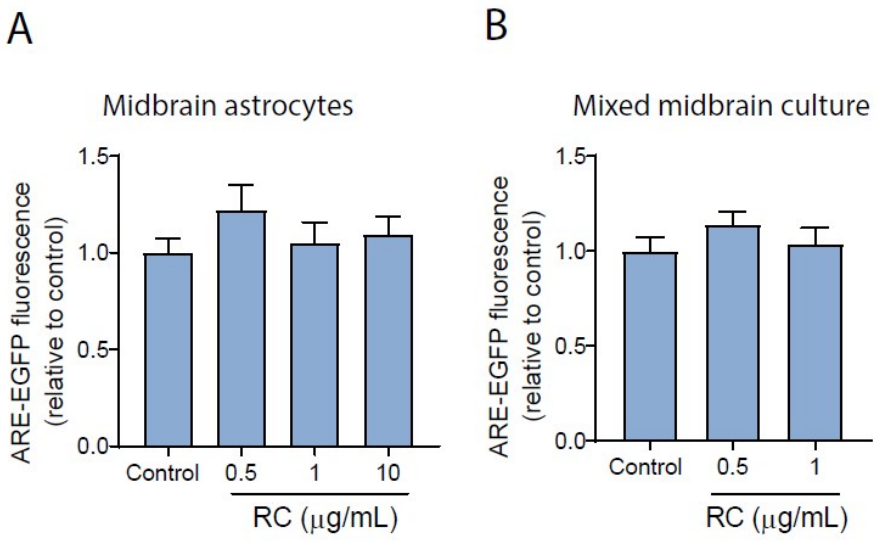
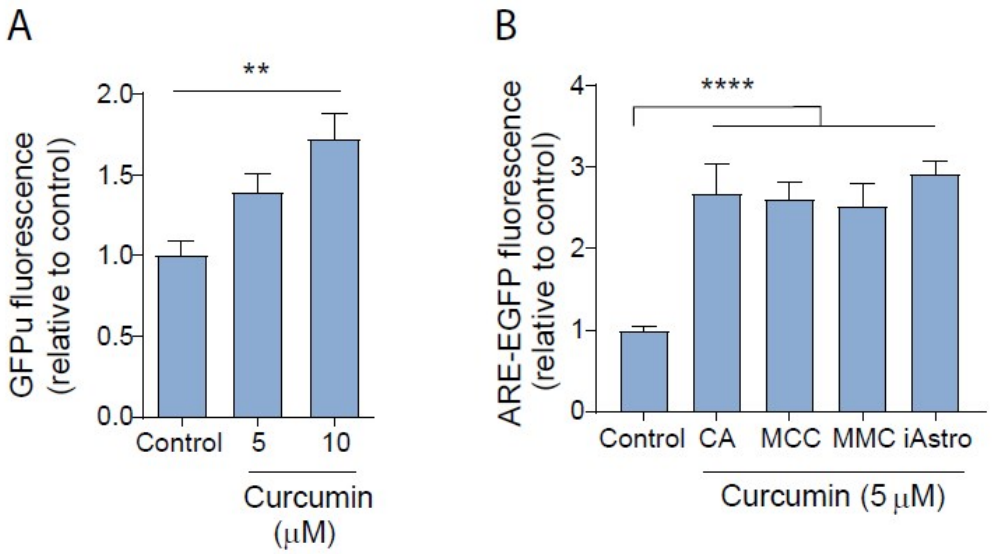
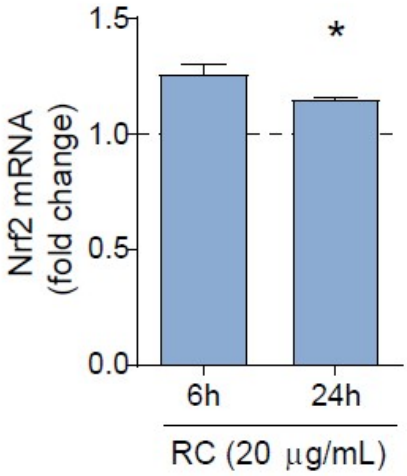
Electronic Supplementary Material (ESI) for Food & Function.



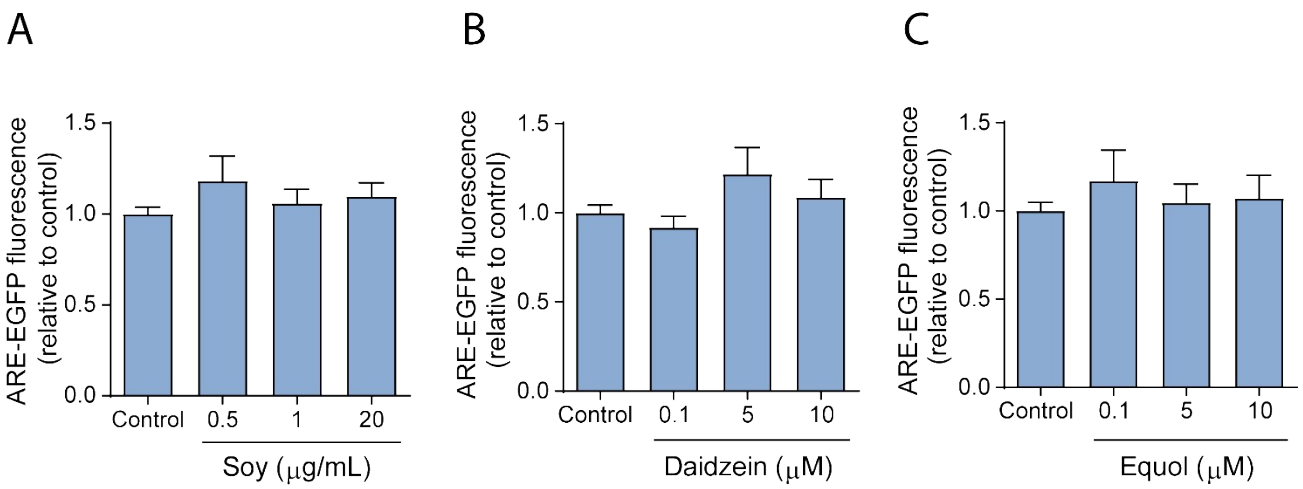
Supplementary Figure 1. A red clover extract fails to activate Nrf2-mediated transcription in midbrain astrocytes. Primary midbrain astrocytes (A) or mixed midbrain cultures (B) transduced with an ARE-EGFP reporter adenovirus for 48 h were incubated in the absence ('control') or presence of red clover extract ('RC') for 24 h and imaged to determine the intracellular EGFP fluorescence intensity. The data are presented as the mean ± SEM; n = 6 (A) or n = 3 (B).



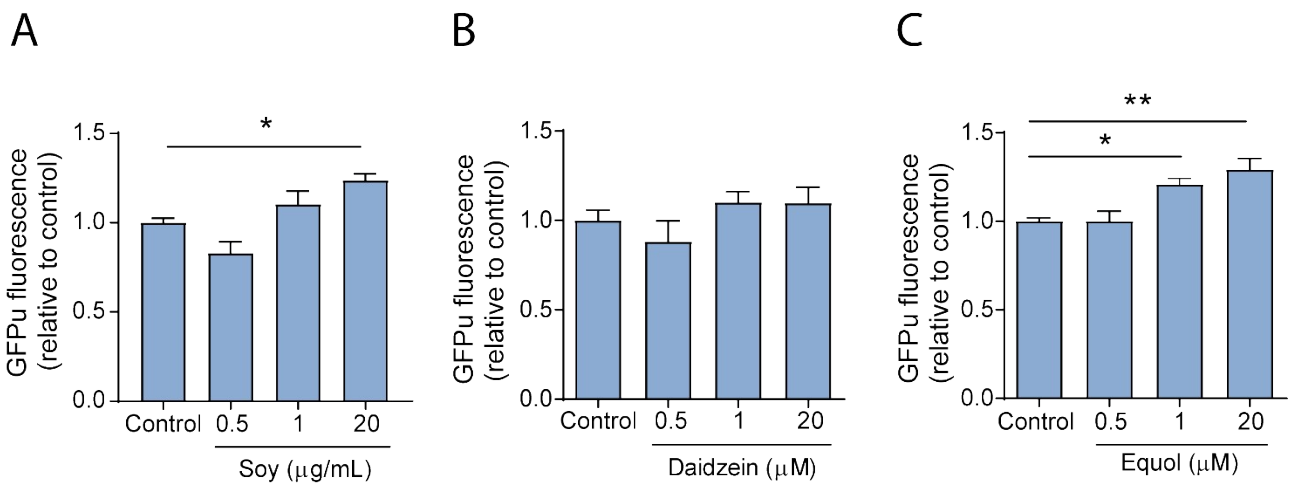
Supplementary Figure 2. Curcumin inhibits the UPS and activates Nrf2-mediated transcription. (A) Primary cortical astrocytes transduced with a reporter adenovirus encoding the UPS substrate GFPu for 48 h were incubated in the absence ('control') or presence of curcumin for 24 h and imaged to determine the intracellular GFP fluorescence intensity. (B) Primary cortical astrocytes (CA), mixed cortical cultures (MCC), mixed midbrain cultures (MMC), or iPSC-derived astrocytes (iAstro) were transduced with an ARE-EGFP reporter adenovirus for 48 h and incubated in the absence ('control') or presence of curcumin for 24 h. The cells were imaged to determine the intracellular EGFP fluorescence intensity. The data in (A) and (B) are presented as the mean ± SEM; n = 3; **p≤0.01, ****p≤0.0001, log transformation, one-way ANOVA with Dunnett's multiple comparisons *post hoc* test. The control value in (B) was determined by pooling the data obtained for the different types of cell cultures incubated without curcumin (n = 12 in total).



Supplementary Figure 3. A red clover extract induces a modest upregulation of Nrf2 expression. Primary cortical astrocytes were incubated in the absence or presence of a red clover extract ('RC') for 6 h or 24 h, and Nrf2 mRNA levels were measured by qRT-PCR. The data are presented as the mean ± SEM; n = 2; *p≤0.05 versus a predicted ratio of 1, log transformation followed by one-sample t-test.



Supplementary Figure 4. A soy extract and soy isoflavones fail to activate Nrf2-mediated transcription in cortical astrocytes. Primary cortical astrocytes transduced with an ARE-EGFP reporter adenovirus for 48 h were incubated in the absence ('control') or presence of soy extract (A), daidzein (B), or equol (C) for 24 h and imaged to determine the intracellular EGFP fluorescence intensity. The data are presented as the mean ± SEM; n = 9 (A); n = 7 (B); n = 6 (C).



Supplementary Figure 5. A soy extract and equol (but not daidzein) inhibit the UPS. Primary cortical astrocytes transduced with a reporter adenovirus encoding the UPS substrate GFPu for 48 h were incubated in the absence ('control') or presence of soy extract (A), daidzein (B), or equol (C) for 24 h and imaged to determine the intracellular GFP fluorescence intensity. The data are presented as the mean ± SEM; n = 4 (A), n = 7 (B), n = 3 (C); *p≤0.05, **p≤0.01, log transformation, one-way ANOVA with Dunnett's multiple comparisons *post hoc* test.