

**Supplemental Table 1.** Summary of glucoraphanin (GR) and total (SF<sub>T</sub>) and individual sulforaphane components by day and treatment arm (Medians [IQR]). **Bold** is for SFR treatment; **bold and grey shade** is for GRR treatment. ND, not determined.

*SFR → GRR arm*

Day	GR μmol/12 hours	Sum of SF Components (SF <sub>T</sub> ) μmol/12 hours	SF μmol/12 hours	SF-Cys μmol/12 hours	SF-NAC μmol/12 hours
5.0	ND	0.08 [ 0.07, 0.10]	0.04 [0.03, 0.05]	0.02 [ 0.02, 0.03]	0.02 [ 0.02, 0.02]
<b>W 6.0</b>	<b>ND</b>	<b>99.25 [86.67, 116.10]</b>	<b>5.99 [4.71, 9.91]</b>	<b>29.99 [23.09, 38.21]</b>	<b>60.22 [48.64, 70.76]</b>
<b>A 6.5</b>	<b>ND</b>	<b>3.97 [ 2.93, 5.55]</b>	<b>0.40 [0.25, 0.68]</b>	<b>0.32 [ 0.16, 1.00]</b>	<b>3.38 [ 2.05, 3.81]</b>
<b>V 7.0</b>	<b>ND</b>	<b>94.58 [71.31, 117.15]</b>	<b>4.73 [3.87, 8.73]</b>	<b>27.25 [12.69, 38.24]</b>	<b>56.82 [46.31, 67.28]</b>
<b>E 8.0</b>	<b>ND</b>	<b>93.14 [65.80, 111.43]</b>	<b>5.54 [2.89, 9.98]</b>	<b>29.46 [10.97, 38.92]</b>	<b>56.25 [42.26, 64.01]</b>
<b>9.0</b>	<b>ND</b>	<b>72.57 [50.91, 114.83]</b>	<b>6.52 [2.73, 8.16]</b>	<b>23.27 [10.77, 33.37]</b>	<b>41.37 [33.98, 75.72]</b>
<b>1 10.0</b>	<b>ND</b>	<b>78.20 [51.86, 94.96]</b>	<b>5.88 [2.18, 10.27]</b>	<b>18.05 [ 9.84, 27.45]</b>	<b>54.26 [32.39, 63.14]</b>
<b>11.0</b>	<b>ND</b>	<b>90.56 [60.25, 111.12]</b>	<b>5.70 [2.98, 13.99]</b>	<b>23.74 [11.20, 29.47]</b>	<b>58.05 [39.76, 71.87]</b>
<b>12.0</b>	<b>0.15 [0.11, 0.22]</b>	<b>101.27 [52.58, 141.95]</b>	<b>4.90 [2.27, 9.06]</b>	<b>30.60 [10.02, 39.99]</b>	<b>63.47 [33.58, 90.85]</b>
<b>12.5</b>	<b>ND</b>	<b>3.50 [ 1.94, 5.59]</b>	<b>0.37 [0.16, 0.63]</b>	<b>0.36 [ 0.22, 0.50]</b>	<b>2.77 [ 1.25, 3.97]</b>
13.0	ND	1.53 [ 0.92, 1.66]	0.11 [0.06, 0.19]	0.16 [ 0.10, 0.22]	1.16 [ 0.72, 1.36]
14.0	ND	0.59 [ 0.44, 0.78]	0.05 [0.03, 0.08]	0.05 [ 0.03, 0.09]	0.48 [ 0.34, 0.65]
15.0	ND	0.30 [ 0.28, 0.37]	0.04 [0.03, 0.04]	0.03 [ 0.02, 0.04]	0.24 [ 0.20, 0.30]
16.0	ND	0.26 [ 0.24, 0.34]	0.04 [0.03, 0.06]	0.03 [ 0.02, 0.04]	0.20 [ 0.16, 0.25]
17.0	0.17 [0.10, 0.21]	0.23 [ 0.16, 0.30]	0.04 [0.03, 0.05]	0.03 [ 0.02, 0.04]	0.13 [ 0.08, 0.23]
<b>W 18.0</b>	<b>3.37 [2.51, 4.67]</b>	<b>25.00 [15.88, 32.48]</b>	<b>1.95 [0.92, 3.68]</b>	<b>5.74 [ 2.36, 0.04]</b>	<b>15.62 [ 9.39, 18.72]</b>
<b>A 18.5</b>	<b>0.21 [0.17, 0.24]</b>	<b>8.08 [ 4.03, 15.33]</b>	<b>0.62 [0.46, 1.14]</b>	<b>1.93 [ 0.27, 4.35]</b>	<b>5.26 [ 2.91, 10.99]</b>
<b>V 19.0</b>	<b>4.16 [2.06, 5.47]</b>	<b>35.56 [13.12, 43.15]</b>	<b>1.92 [0.47, 3.01]</b>	<b>5.94 [ 2.78, 13.34]</b>	<b>22.39 [ 7.31, 30.00]</b>
<b>E 20.0</b>	<b>2.27 [1.93, 3.61]</b>	<b>25.11 [19.11, 52.70]</b>	<b>1.71 [1.12, 2.58]</b>	<b>7.61 [ 4.46, 19.48]</b>	<b>18.10 [11.23, 35.09]</b>
<b>21.0</b>	<b>3.05 [2.23, 3.88]</b>	<b>24.81 [10.48, 54.13]</b>	<b>2.00 [0.49, 3.56]</b>	<b>6.74 [1.75, 17.77]</b>	<b>16.15 [ 7.81, 35.10]</b>
<b>2 22.0</b>	<b>2.67 [1.82, 3.18]</b>	<b>34.38 [12.62, 61.93]</b>	<b>1.79 [0.46, 5.13]</b>	<b>9.53 [2.96, 19.50]</b>	<b>19.91 [ 7.96, 37.15]</b>
<b>23.0</b>	<b>2.77 [2.16, 3.70]</b>	<b>19.00 [11.18, 39.77]</b>	<b>1.16 [0.86, 2.99]</b>	<b>4.89 [2.28, 11.27]</b>	<b>12.80 [ 8.19, 25.60]</b>
<b>24.0</b>	<b>2.23 [1.02, 2.82]</b>	<b>20.87 [ 9.63, 30.34]</b>	<b>1.29 [0.71, 2.71]</b>	<b>4.54 [1.36, 8.12]</b>	<b>11.76 [ 6.21, 17.99]</b>
<b>24.5</b>	<b>0.23 [0.15, 0.38]</b>	<b>8.44 [ 4.96, 17.11]</b>	<b>0.92 [0.41, 2.56]</b>	<b>0.62 [0.16, 3.24]</b>	<b>6.42 [ 3.09, 13.01]</b>

*GRR → SFR arm*

Day	GR μmol/12 hours	Sum of SF components (SF <sub>T</sub> ) μmol/12 hours	SF μmol/12 hours	SF-Cys μmol/12 hours	SF-NAC μmol/12 hours
5.0	0.14 [0.12, 0.17]	0.08 [ 0.07, 0.09]	0.04 [0.03, 0.04]	0.02 [0.02, 0.03]	0.02 [ 0.02, 0.02]
<b>W</b> 6.0	<b>3.58 [2.28, 4.59]</b>	<b>12.22 [ 6.25, 30.03]</b>	<b>1.50 [0.42, 2.74]</b>	<b>2.13 [0.91, 5.27]</b>	<b>8.52 [ 3.42, 19.07]</b>
<b>A</b> 6.5	<b>0.13 [0.09, 0.20]</b>	<b>7.00 [ 3.76, 11.67]</b>	<b>0.41 [0.20, 0.77]</b>	<b>0.87 [0.23, 2.46]</b>	<b>4.68 [ 2.71, 8.39]</b>
<b>V</b> 7.0	<b>3.21 [1.19, 4.60]</b>	<b>28.75 [ 6.90, 44.64]</b>	<b>1.30 [0.33, 2.59]</b>	<b>6.16 [1.26, 17.59]</b>	<b>18.21 [ 5.93, 26.53]</b>
<b>E</b> 8.0	<b>2.12 [1.42, 2.89]</b>	<b>25.75 [ 5.99, 56.06]</b>	<b>1.86 [0.64, 4.62]</b>	<b>4.28 [ 0.97, 20.69]</b>	<b>17.19 [ 4.04, 35.00]</b>
9.0	2.95 [1.67, 4.01]	15.63 [ 8.95, 31.50]	1.18 [0.59, 2.11]	3.38 [ 1.13, 7.19]	10.95 [ 6.96, 19.70]
<b>1</b> 10.0	<b>2.60 [2.06, 3.35]</b>	<b>19.09 [ 8.51, 33.83]</b>	<b>1.63 [0.76, 3.73]</b>	<b>2.66 [ 0.94, 8.73]</b>	<b>12.56 [ 5.17, 21.17]</b>
11.0	3.03 [1.89, 3.87]	12.60 [ 7.08, 32.18]	0.86 [0.27, 3.32]	2.60 [ 1.14, 7.15]	9.03 [ 4.53, 18.93]
12.0	3.45 [2.11, 4.31]	24.53 [12.17, 31.42]	1.47 [0.66, 3.91]	5.81 [ 2.17, 9.09]	15.03 [ 8.03, 21.30]
12.5	0.19 [0.10, 0.46]	7.84 [ 6.31, 19.30]	0.61 [0.37, 1.18]	1.17 [ 0.32, 4.72]	6.04 [ 4.07, 13.54]
13.0	0.15 [0.12, 0.20]	2.56 [ 1.31, 3.33]	0.21 [0.11, 0.46]	0.25 [ 0.07, 0.45]	1.74 [ 0.85, 2.56]
14.0	ND	1.01 [ 0.67, 1.58]	0.09 [0.07, 0.15]	0.09 [ 0.03, 0.19]	0.82 [ 0.51, 1.25]
15.0	ND	0.41 [ 0.27, 0.64]	0.05 [0.04, 0.08]	0.03 [ 0.02, 0.04]	0.31 [ 0.20, 0.52]
16.0	ND	0.30 [ 0.18, 0.56]	0.05 [0.04, 0.07]	0.03 [ 0.02, 0.05]	0.21 [ 0.12, 0.48]
17.0	ND	0.21 [ 0.15, 0.38]	0.05 [0.03, 0.07]	0.03 [ 0.02, 0.05]	0.12 [ 0.06, 0.27]
<b>W</b> 18.0	<b>0.16 [0.15, 0.20]</b>	<b>90.58 [63.39, 111.27]</b>	<b>6.10 [3.47, 9.30]</b>	<b>24.93 [15.87, 35.67]</b>	<b>53.08 [38.95, 67.60]</b>
<b>A</b> 18.5	<b>ND</b>	<b>3.42 [ 2.66, 15.76]</b>	<b>0.46 [0.16, 0.86]</b>	<b>0.51 [ 0.33, 3.97]</b>	<b>2.61 [ 1.95, 11.28]</b>
<b>V</b> 19.0	<b>ND</b>	<b>75.41 [56.64, 92.18]</b>	<b>5.71 [2.89, 9.44]</b>	<b>19.09 [ 6.70, 26.92]</b>	<b>44.73 [36.82, 57.39]</b>
<b>E</b> 20.0	<b>ND</b>	<b>79.62 [53.14, 92.70]</b>	<b>7.91 [2.62, 11.26]</b>	<b>17.58 [ 7.97, 27.41]</b>	<b>50.78 [33.38, 59.63]</b>
21.0	ND	72.91 [49.00, 99.86]	6.95 [2.04, 11.06]	18.30 [ 9.14, 25.81]	47.66 [29.66, 63.94]
<b>2</b> 22.0	<b>ND</b>	<b>75.53 [65.85, 92.10]</b>	<b>3.89 [2.47, 10.60]</b>	<b>20.22 [13.37, 26.25]</b>	<b>51.24 [38.67, 58.88]</b>
23.0	ND	74.77 [51.15, 88.00]	6.10 [2.60, 8.60]	15.67 [11.22, 24.23]	51.70 [30.99, 58.64]
24.0	ND	57.50 [48.54, 73.07]	4.17 [2.99, 6.46]	16.86 [ 8.77, 21.36]	35.51 [31.43, 49.52]
24.5	ND	2.81 [ 1.75, 5.31]	0.28 [0.13, 0.55]	0.36 [ 0.15, 0.93]	2.07 [ 1.54, 3.87]

**Supplemental Table 2.** Daily percent change in SF<sub>T</sub> amounts over 7 days while on treatment<sup>a</sup>.

<b>Treatment and Time</b>	<b>Median daily percent change over 7 days [IQR]</b>	<b>Ho: Percent Change = 0 Signed-rank p-value</b>	<b>Ho: Day 6 to 12 = Day 18 to 24; Rank-sum p-value</b>
SFR Day 6 to 12 (n=24)	-0.9% [-6.9%, 4.2%]	p= 0.657	p= 0.120
SFR Day 18 to 24 (n=24)	-4.3% [-9.3%, -0.9%]	p= 0.004	
GRR Day 6 to 12 (n=24)	2.3% [-8.9%, 13.8%]	p= 0.541	p= 0.139
GRR Day 18 to 24 (n=23)	-5.6% [-13.9%, 1.8%]	p= 0.033	

<sup>a</sup>calculated as  $100 * (\exp(\text{slope}) - 1)$  where the slope is the one from regressing SF<sub>T</sub> in the log scale on the 7 days while on a given treatment

**Supplemental Table 3.** Summary statistics of average levels and rank-sum test comparing whether SF<sub>T</sub> amounts within treatments are equal.

<b>Treatment arm</b>	<b>SFR Treatment</b> ( $\mu\text{mol SF}_T/12$ hours) Median [ IQR ]	<b>GRR Treatment</b> ( $\mu\text{mol SF}_T/12$ hours) Median [ IQR ]
SFR $\rightarrow$ GRR (n=23)	93.9 <sup>a</sup> [66.6, 106.2]	24.2 <sup>b</sup> [15.4, 40.5]
GRR $\rightarrow$ SFR (n=24)	74.9 <sup>b</sup> [58.6, 88.4]	19.3 <sup>a</sup> [ 9.7, 32.2]
Rank-sum test	p = 0.021	p = 0.202

<sup>a</sup>Group median of the within-individual 7-day medians of the overnight SF<sub>T</sub> amounts on days 6 to 12

<sup>b</sup>Group median of the within-individual 7-day medians of the overnight SF<sub>T</sub> amounts on days 18 to 24

**Supplemental Table 4:** Null effects of GSTM1 and GSTT1 genotypes on urinary excretion of sulforaphane conjugates following 7 daily administrations of SFR or GRR.

	<b>SFR</b> <b>Total conjugate excreted<sup>1</sup></b> <b>Median [IQR]</b>	<b>Rank Sum</b> <b>p-value</b>	<b>GRR</b> <b>Total conjugate excreted<sup>1</sup></b> <b>Median [IQR]</b>	<b>Rank Sum</b> <b>p-value</b>
GSTM Negative n= 16	583.2 [412.8, 699.6]	p= 0.71	232.6 [130.8, 295.5]	p= 0.57
GSTM Positive n= 31	544.8 [421.3, 638.0]		254.2 [171.9, 338.0]	
GSTT Negative n= 24	585.5 [418.3, 693.4]	p= 0.70	252.4 [107.3, 315.4]	p= 0.47
GSTT Positive n= 23	544.8 [402.3, 658.8]		242.9 [179.0, 352.5]	

<sup>1</sup> Total observed and estimated excretion of sulforaphane conjugates (SF-Cys and SF-NAC) while on treatment. Where 2<sup>nd</sup> 12 hour urines were not collected, the estimated decline was 0.044 x 1<sup>st</sup> 12 hour conjugates for SFR treatment and 0.413 x 1<sup>st</sup> 12 hour conjugates for GRR treatment.