

**Relationship of thermal treatment and
antioxidant capacity in cooked foods**

SUPPLEMENTAL INFORMATION

Table S1. Samples: foods and applied thermal processing.

Food Group	Food	Cooking Method
Cereals	Bread	Fried
Cereals	Bread	Toast
Cereals	Penne	Boil
Cereals	Rice	Boil
Egg	Egg	Boil
Egg	Egg	Grill
Egg	Egg	Fried
Egg	Egg	Roast
Fish	Cod fish	Boil
Fish	Cod fish	Grill
Fish	Cod fish	Fried
Fish	Salmon	Grill
Fish	Salmon	Fried
Fish	Salmon	Roast
Fruits	Apple	Grill
Fruits	Apple	Fried
Fruits	Apple	Roast
Fruits	Banana	Grill
Fruits	Banana	Roast
Legumes	Beans (Kidney)	Boil
Legumes	Beans (Kidney)	Roast
Legumes	Lentils	Boil
Legumes	Lentils	Grill
Legumes	Lentils	Roast
Meat	Beef	Boil
Meat	Beef	Grill
Meat	Beef	Fried
Meat	Beef	Roast
Meat	Chicken	Boil
Meat	Chicken	Grill
Meat	Chicken	Fried
Meat	Chicken	Roast
Meat	Lamb	Boil
Meat	Lamb	Grill
Meat	Lamb	Fried
Meat	Lamb	Roast
Meat	Pork	Boil
Meat	Pork	Grill
Meat	Pork	Fried
Meat	Pork	Roast
Tubbers	Potatoe	Boil
Tubbers	Potatoe	Grill
Tubbers	Potatoe	Fried
Vegetables	Capsicum	Boil
Vegetables	Capsicum	Grill
Vegetables	Capsicum	Fried

Vegetables	Capsicum	Roast
Vegetables	Carrot	Boil
Food Group	Food	Cooking Method
Vegetables	Carrot	Grill
Vegetables	Carrot	Fried
Vegetables	Carrot	Roast
Vegetables	Cauliflower	Boil
Vegetables	Cauliflower	Grill
Vegetables	Cauliflower	Fried
Vegetables	Cauliflower	Roast
Vegetables	Onion	Boil
Vegetables	Onion	Grill
Vegetables	Onion	Fried
Vegetables	Onion	Roast
Vegetables	Tomatoe	Boil
Vegetables	Tomatoe	Fried
Vegetables	Tomatoe	Roast

Table S2. Correlations between heat damage markers (furosine, HMF and furfural) and antioxidant capacity measured via Folin-Ciocalteu (mg gallic acid equivalent/kg of food), FRAP (mmol Trolox equivalent/kg of food) and DPPH (mmol Trolox equivalent/kg of food) depending on the different type of cooking applied.

CEREALS	Mean AOX capacity	Furosine	HMF	Furfural
Folin-Ciocalteu Digestion	1935 ± 1405	.41 [-.29, .83]	.07 [-.59, .67]	.09 [-.57, .68]
Folin-Ciocalteu Fermentation	18638 ± 5744	-.49 [-.85, .21]	.49 [-.20, .86]	.42 [-.29, .83]
FRAP Digestion	4.12 ± 4.29	.34 [-.37, .80]	-.25 [-.76, .45]	-.28 [-.77, .43]
FRAP Fermentation	105 ± 17.8	-.11 [-.69, .56]	.52 [-.16, .87]	.37 [-.34, .81]
DPPH Digestion	4.98 ± 5.16	-.64* [-.91, -.02]	-.16 [-.72, .52]	-.04 [-.65, .60]
DPPH Fermentation	104 ± 23.4	.12 [-.55, .70]	-.25 [-.76, .45]	-.27 [-.77, .43]
EGGS	Mean AOX capacity	Furosine	HMF	Furfural
Folin-Ciocalteu Digestion	2542 ± 1664	.65 [-.83, .99]	-.66 [-.99, .82]	.83 [-.65, 1.00]
Folin-Ciocalteu Fermentation	49849 ± 4956	.66 [-.82, .99]	-.51 [-.99, .88]	.36 [-.92, .98]
FRAP Digestion	5.90 ± 0.83	.41 [-.91, .98]	-.63 [-.99, .84]	.47 [-.90, .99]
FRAP Fermentation	282 ± 12.0	.14 [-.95, .97]	.13 [-.95, .97]	-.34 [-.98, .92]
DPPH Digestion	9.99 ± 0.81	-.04 [-.96, .96]	.02 [-.96, .96]	.77 [-.74, .99]
DPPH Fermentation	235 ± 70.6	.36 [-.92, .98]	-.41 [-.98, .91]	.93 [-.31, 1.00]
FISH	Mean AOX capacity	Furosine	HMF	Furfural
Folin-Ciocalteu Digestion	2626 ± 825	-.02 [-.82, .80]	.32 [-.67, .90]	-.53 [-.94, .49]
Folin-Ciocalteu Fermentation	59530 ± 22284	-.09 [-.84, .78]	.13 [-.76, .85]	-.36 [-.91, .64]
FRAP Digestion	2.51 ± 0.64	.43 [-.59, .92]	.44 [-.58, .92]	.12 [-.77, .85]
FRAP Fermentation	319 ± 130	-.09 [-.84, .78]	.13 [-.76, .85]	-.37 [-.91, .63]
DPPH Digestion	14.2 ± 8.95	.21 [-.73, .87]	.22 [-.72, .88]	.07 [-.79, .83]
DPPH Fermentation	214 ± 36.7	-.26 [-.88, .70]	-.32 [-.90, .67]	-.12 [-.85, .76]
FRUITS	Mean AOX	Furosine	HMF	Furfural

	capacity			
Folin-Ciocalteu Digestion	598 ± 512	-.57 [-.99, .87]	-.64 [-.99, .84]	-.28 [-.98, .93]
Folin-Ciocalteu Fermentation	31752 ± 8985	.64 [-.83, .99]	.63 [-.84, .99]	.87 [-.56, 1.00]
FRAP Digestion	5.81 ± 3.81	-.55 [-.99, .87]	-.20 [-.97, .94]	.24 [-.94, .98]
FRUITS	Mean AOX capacity	Furosine	HMF	Furfural
FRAP Fermentation	126 ± 39.2	-.09 [-.97, .95]	-.52 [-.99, .88]	-.96* [-1.00, .04]
DPPH Digestion	22.2 ± 33.5	-.66 [-.99, .82]	-.63 [-.99, .84]	-.43 [-.98, .90]
DPPH Fermentation	144 ± 24.3	-.00 [-.96, .96]	-.99** [-1.00, -.69]	-.53 [-.99, .88]
LEGUMES	Mean AOX capacity	Furosine	HMF	Furfural
Folin-Ciocalteu Digestion	1803 ± 1532	.46 [-.71, .95]	.21 [-.83, .92]	-.33 [-.94, .78]
Folin-Ciocalteu Fermentation	43519 ± 19159	.77 [-.36, .98]	-.23 [-.92, .82]	-.21 [-.92, .83]
FRAP Digestion	6.95 ± 4.52	-.39 [-.95, .75]	.17 [-.84, .91]	-.89* [-.99, -.05]
FRAP Fermentation	240 ± 101	.72 [-.44, .98]	-.16 [-.91, .84]	-.33 [-.94, .78]
DPPH Digestion	38.7 ± 5.21	.06 [-.87, .89]	-.17 [-.91, .84]	-.78 [-.98, .34]
DPPH Fermentation	187 ± 56.3	-.84 [-.99, .16]	-.01 [-.88, .88]	-.70 [-.98, .48]
MEAT	Mean AOX capacity	Furosine	HMF	Furfural
Folin-Ciocalteu Digestion	2616 ± 998	.00 [-.51, .52]	-.02 [-.53, .50]	-.10 [-.59, .43]
Folin-Ciocalteu Fermentation	49297 ± 13682	-.05 [-.55, .48]	-.12 [-.60, .42]	-.12 [-.60, .42]
FRAP Digestion	3.05 ± 0.68	-.58* [-.84, -.10]	.06 [-.47, .56]	-.00 [-.51, .51]
FRAP Fermentation	278 ± 73.7	-.17 [-.63, .37]	-.23 [-.67, .32]	-.18 [-.64, .36]
DPPH Digestion	14.6 ± 6.10	.48 [-.04, .80]	.31 [-.24, .71]	.22 [-.33, .66]
DPPH Fermentation	481.7 ± 288	-.42 [-.77, .12]	-.38 [-.75, .16]	-.18 [-.63, .37]
VEGETABLES	Mean AOX capacity	Furosine	HMF	Furfural
Folin-Ciocalteu Digestion	461 ± 394	.80** [.52, .92]	.80** [.53, .93]	-.02 [-.49, .47]
Folin-Ciocalteu Fermentation	27727 ± 13643	-.08 [-.54, .42]	-.15 [-.59, .36]	-.22 [-.64, .29]
FRAP Digestion	5.20 ± 5.70	.80**	.74**	-.04

FRAP Fermentation	149 ± 66.0	[.52, .92] -.04	[.40, .90] -.08	[-.51, .45] -.14
DPPH Digestion	17.4 ± 20.3	[-.51, .45] .84**	[-.54, .42] .75**	[-.58, .36] -.03
DPPH Fermentation	136.3 ± 51.4	[.60, .94] -.22	[.42, .90] -.16	[-.50, .46] -.08
		[-.63, .29]	[-.60, .34]	[-.54, .42]

Note. Correlations were obtained by the Pearson method. Values in square brackets indicate the 95% confidence interval for each correlation [28]. Statistic labels: *: $p < 0.05$, **: $p < 0.01$.