Supplementary data for the article:

Cirkovic Velickovic, T. D.; Stanic-Vucinic, D. J. The Role of Dietary Phenolic Compounds in Protein Digestion and Processing Technologies to Improve Their Antinutritive Properties. *Comprehensive Reviews in Food Science and Food Safety* **2018**, *17* (1), 82–103. https://doi.org/10.1111/1541-4337.12320

**Supplemental Information**

# The Role of Dietary Phenolic Compounds in Protein Digestion and Processing Technologies to Improve their Anti-nutritive Properties

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Table S1. Overview of the studies investigating interactions of phenolic compounds with bovine serum albumin (BSA).

| Phenolic compound | Type | Methodology | Conditions | Binding constant ($Ka/M^{-1}$) | Binding site number | Digestibility | Reference |
|---|---|---|---|---|---|---|---|
| Flavone | Flavone | BSA fluorescence quenching | pH 7, up to BSA: ligand ratio 1:5 | $1.95\times10^{4}$, 310.15 K | 0.95 | nd | Xiao and others 2010 |
| Flavone | Flavone | BSA fluorescence quenching | pH 7.4 | $6.17x10^{4}$, 300.15 K | 1.03 | nd | Shi and Cao 2011 |

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|---|---|---|---|---|---|---|---|
| 7-Hydroxyflavone | Flavone | BSA fluorescence quenching | pH 7.4 | $1.26x10^{6}$, 300.15 K | 1.25 | nd | Shi and Cao 2011 |
| 7-Hydroxyflavone | Flavone | BSA fluorescence quenching | pH 7, up to BSA: ligand ratio 1:5 | $1.48\times10^{7}$, 310.15 K | 1.40 | nd | Xiao and others 2010 |
| 3,6-dihydroxy flavone | Flavone | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:1 | $1.12x10^{3}$, RT | 0.6 | nd | Awasthi and others 2014 |
| Chrysin | Flavone | BSA fluorescence quenching | pH 7, up to BSA: ligand ratio 1:5 | $1.20\times10^{6}$, 310.15 K | 1.17 | nd | Xiao and others 2010 |
| Chrysin | Flavone | BSA fluorescence quenching | pH 7.4 | $6.61x10^{4}$, 300.15 K | 0.98 | nd | Shi and Cao 2011 |
| Baicalein | Flavone | BSA fluorescence quenching | pH 7, up to BSA: ligand ratio 1:6 | $6.46\times10^{4}$, 299 K | 1.18 | nd | Roy and others 2016 |
| Baicalein | Flavone | BSA fluorescence quenching | pH 7, up to BSA: ligand ratio 1:5 | $4.67\times10^{5}$, 310.15 K | 1.08 | nd | Xiao and others 2010 |
| Baicalein | Flavone | BSA fluorescence quenching | pH 7.4 | $3.89x10^{5}$, 300.15 K | 1.1 | nd | Shi and Cao 2011 |
| Baicalein | Flavone | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:10 | $6.62x10^{7}$, 310 K | 1.33 | nd | Xiao and others 2009 |
| Baicalin | Flavone glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:25 | $1.67\times10^{6}$, 295 K | 1.33 | nd | Xiao and others 2007a |
| Baicalin | Flavone glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:10 | $1.63x10^{6}$, 310 K | 1.17 | nd | Xiao and others 2009 |
| Baicalin | Flavone glycoside | BSA fluorescence quenching | pH 7.4 | $7.41x10^{4}$, 300.15 K | 1.02 | nd | Shi and Cao 2011 |
| Apigenin | Flavone | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:1.2 | $5.32x10^{4}$, 291 K | 090 | nd | Bi and others 2012 |
| Apigenin | Flavone | BSA fluorescence quenching | pH 7.4 | $4.90x10^{5}$, 300.15 K | 1.11 | nd | Shi and Cao 2011 |

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|---|---|---|---|---|---|---|---|
| Luteolin | Flavone | Enhancement of ligand fluorescence, Scatchard analysis | pH 7.4, up to BSA: ligand ratio 1:10 | $1.43x10^5$, 298 K | 0.81 | nd | Dufour and Dangles 2005 |
| Luteolin | Flavone | BSA fluorescence quenching | pH 7.4 | $4.47x10^5$, 300.15 K | 1.11 | nd | Shi and Cao 2011 |
| Wogonin | Flavone | BSA fluorescence quenching | pH 7.4 | $2.75x10^5$, 300.15 K | 1.09 | nd | Shi and Cao 2011 |
| Tangeretin | Flavone | BSA fluorescence quenching | pH 7.4 | $5.75x10^4$, 300.15 K | 0.98 | nd | Shi and Cao 2011 |
| Nobiletin | Flavone | BSA fluorescence quenching | pH 7.4 | $5.89x10^4$, 300.15 K | 0.97 | nd | Shi and Cao 2011 |
| Gossypin | Flavone glycoside | Equilibrium dialysis | pH 7.4 | nd | nd | nd | Sagar and others 2008 |
| Icariin | Flavone | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:5.18 | $3.60x10^4$, 298 K | 0.95 | nd | Liu and others 2014 |
| Galangin | Flavonol | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:2 | $1.89x10^5$,310 K | nd | nd | Cao and others 2010 |
| Galangin | Flavonol | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:2 | $6.43x10^5$, 310.15 K | 0.92 | nd | Xiao and others 2008b |
| Galangin | Flavonol | BSA fluorescence quenching | pH 7.4 | $2.45x10^5$, 300.15 K | 1.08 | nd | Shi and Cao 2011 |
| Kaempferide | Flavonol | BSA fluorescence quenching | pH 7.4 | $1.62x10^5$, 300.15 K | 1.04 | nd | Shi and Cao 2011 |
| Kaempferol | Flavonol | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:2 | $5.08x10^6$, 310 K | nd | nd | Cao and others 2010 |
| Kaempferol | Flavonol | Enhancement of ligand fluorescence, Scatchard analysis | pH 7.4, up to BSA: ligand ratio 1:10 | $1.19x10^4$, 298 K | 1.32 | nd | Dufour and Dangles 2005 |
| Kaempferol | Flavonol | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:2 | $2.58x10^6$, 310.15 K | 1.12 | nd | Xiao and others 2008b |

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|---|---|---|---|---|---|---|---|
| Kaempferol | Flavonol | BSA fluorescence quenching | pH 7.5 | $3.5x10^5$, 298 K | 1.0 | nd | Skrt and others 2012 |
| Kaempferol | Flavonol | BSA fluorescence quenching | pH 7.4 | $2.24x10^6$, 300.15 K | 1.22 | nd | Shi and Cao 2011 |
| Kaempferol-3-glucoside | Flavonol glycoside | BSA fluorescence quenching | pH 7.5 | $1.8x10^5$, 298 K | 0.55 | nd | Skrt and others 2012 |
| Kaempferitrin | Flavonol glycoside | BSA fluorescence quenching | pH 7.4 | $1.23x10^5$, 300.15 K | 1.08 | nd | Shi and Cao 2011 |
| Quercetin | Flavonol | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:2 | $3.70x10^7$, 310 K | nd | nd | Cao and others 2010 |
| Quercetin | Flavonol | Enhancement of ligand fluorescence, Scatchard analysis | pH 7.4, up to BSA: ligand ratio 1:1.72 | $1.03x10^5$, 298 K | 0.95 | nd | Dangles and others 1999 |
| Quercetin | Flavonol | Enhancement of ligand fluorescence, Scatchard analysis | pH 7.4, up to BSA: ligand ratio 1:10 | $1.34x10^5$, 298 K | 0.89 | nd | Dufour and Dangles 2005 |
| Quercetin | Flavonol | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:10 | $7.34x10^4$, 300 K | nd | nd | Fang and others 2011 |
| Quercetin | Flavonol | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:15 | $1.02x10^5$, 298 K | 0.82 | nd | Liu and others 2010a |
| Quercetin | Flavonol | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:2 | $3.83x10^7$, 310 K | 1.00 | nd | Liu and others 2010b |
| Quercetin | Flavonol | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:5.3 | $4.94x10^5$, 298 K | 0.97 | nd | Liu and others 2014 |
| Quercetin | Flavonol | NMR | normalized affinity index | $2.02x10^5$, 298 K | nd | nd | Martini and others 2008 |
| Quercetin | Flavonol | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:0.67 | $4.85x10^5$, 298 K | 1.19 | nd | Mishra and others 2005 |
| Quercetin | Flavonol | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:2 | $3.65x10^7$, 310.15 K | 1.29 | nd | Xiao and others 2008b |

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|---|---|---|---|---|---|---|---|
| Quercetin | Flavonol | BSA fluorescence quenching | pH 7.5 | $3.4x10^5$, 298 K | 1.1 | nd | Skrt and others 2012 |
| Quercetin | Flavonol | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:2 | $3.65x10^7$, 310 K | 1.29 | nd | Xiao and others 2009 |
| Quercetin | Flavonol | Stopped-flow spectrophotometry | pH 7.4 | nd | nd | nd | Kitson 2004 |
| Quercetin | Flavonol | BSA fluorescence quenching | pH 7.4 | $2.45x10^5$, 300.15 K | 1.06 | nd | Shi and Cao 2011 |
| Quercetin-Cu(II) complex | Flavonol | BSA fluorescence quenching | pH 7, up to BSA: ligand ratio 1:1.925 | $4.926x10^4$, 299 K | 1.23 | nd | Roy and others 2012 |
| Quercetin 3-O-β-D-glucopyranoside | Flavonol glycoside | NMR | normalized affinity index | $9.96x10^3$, 298 K | nd | nd | Martini and others 2008 |
| Isoquercetin | Flavonol glycoside | Enhancement of ligand fluorescence, Scatchard analysis | pH 7.4, up to BSA: ligand ratio 1:1.72 | $1.45x10^4$, 298 K | 3.18 | nd | Dangles and others 1999 |
| Quercitrin | Flavonol glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:10 | $6.47x10^3$, 310.15 K | 0.81 | nd | Xiao and others 2008b |
| Quercitrin | Flavonol glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:10 | $6.47x10^3$, 310 K | 0.81 | nd | Xiao and others 2009 |
| Isoquercitrin | Flavonol glycoside | Enhancement of ligand fluorescence, Scatchard analysis | pH 7.4, up to BSA: ligand ratio 1:10 | $1.29x10^4$, 298 K | 1.43 | nd | Dufour and Dangles 2005 |
| Isoquercitrin | Flavonol glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:5.18 | $4.66x10^4$, 298 K | 0.92 | nd | Liu and others 2014 |
| Myricetin | Flavonol | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:2 | $2.15x10^8$, 310 K | nd | nd | Cao and others 2010 |
| Myricetin | Flavonol | BSA fluorescence | pH 7.4, up to | $1.84x10^8$, 310 K | 1.00 | nd | Liu and others |

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|---|---|---|---|---|---|---|---|
| | | quenching | BSA: ligand ratio 1:2 | | | | 2010b |
| Myricetin | Flavonol | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:2 | $4.54x10^{8}$, 310.15 K | 1.42 | nd | Xiao and others 2008b |
| Myricetin | Flavonol | BSA fluorescence quenching | pH 7.4 | $3.72x10^{5}$, 300.15 K | 1.14 | nd | Shi and Cao 2011 |
| Fisetin | Flavonol | BSA fluorescence quenching | pH 7, up to BSA: ligand ratio 1:7 | $1.35x10^{3}$, 299 K | 1.06 | nd | Roy and others 2013 |
| Rutin | Flavonol glycoside | Enhancement of ligand fluorescence, Scatchard analysis | pH 7.4, up to BSA: ligand ratio 1:1.72 | $8.6x10^{5}$, 298 K | 2.66 | nd | Dangles and others 1999 |
| Rutin | Flavonol glycoside | Enhancement of ligand fluorescence, Scatchard analysis | pH 7.4, up to BSA: ligand ratio 1:10 | $1.07x10^{4}$, 298 K | 1.44 | nd | Dufour and Dangles 2005 |
| Rutin | Flavonol glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:15 | $8.39x10^{4}$, 298 K | 0.95 | nd | Liu and others 2010a |
| Rutin | Flavonol glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:40 | $4.47x10^{5}$, 310 K | 1.19 | nd | Xiao and others 2009 |
| Rutin | Flavonol glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:3.73 | $1.65x10^{4}$, 298 K | 0.86 | nd | Liu and others 2014 |
| Rutin | Flavonol glycoside | BSA fluorescence quenching | pH 7.4 | $1.15x10^{5}$, 300.15 K | 1.06 | nd | Shi and Cao 2011 |
| Morin hydrate | Flavonol | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:1 | $5.01x10^{4}$, RT, | 0.77 | nd | Awasthi and others 2014 |
| Morin | Flavonol | BSA fluorescence quenching | pH 7, up to BSA: ligand ratio 1:10 | $7.75\times10^{4}$, 298 K | 1.01 | nd | Roy and others 2014 |
| Crassirhizomoside B | Flavonol glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:6 | $5.70x10^{4}$, 297 K | 1.09 | nd | Ma and others 2017 |
| Crassirhizomoside C | Flavonol glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:6 | $4.70x10^{4}$, 297 K | 1.07 | nd | Ma and others 2017 |
| Sutchuenosid | Flavonol | BSA fluorescence | pH 7.4, up to | $4.60x10^{4}$, 297 K | 1.08 | nd | Ma and others 2017 |

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|---|---|---|---|---|---|---|---|
| e A | glycoside | quenching | BSA: ligand ratio 1:6 | | | | |
| Formononetin -7-O-β-D-glucoside | Isoflavone glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:15 | $2.22x10^4$, 298 K | 0.90 | nd | Liu and others 2010a |
| Genistein | Isoflavone | BSA fluorescence quenching | pH 7, up to BSA: ligand ratio 1:10 | $8.40\times10^5$, 310.15 K | 1.02 | nd | Zhao and others 2009 |
| Genistein | Isoflavone | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:10 | $8.40x10^5$, 310 K | 1.02 | nd | Xiao and others 2009 |
| Genistein | Isoflavone | BSA fluorescence quenching | pH 7.4 | $1.38x10^4$, 300.15 K | 0.90 | nd | Shi and Cao 2011 |
| Genistin | Isoflavone glycoside | BSA fluorescence quenching | pH 7, up to BSA: ligand ratio 1:25 | $1.44\times10^5$, 310.15 K | 1.17 | nd | Zhao and others 2009 |
| Genistin | Isoflavone glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:25 | $1.44x10^5$, 310 K | 1.17 | nd | Xiao and others 2009 |
| Genistin | Isoflavone glycoside | BSA fluorescence quenching | pH 7.4 | $1.86x10^3$, 300.15 K | 0.81 | nd | Shi and Cao 2011 |
| Daidzein | Isoflavone | BSA fluorescence quenching | pH 7, up to BSA: ligand ratio 1:25 | $5.20\times10^4$, 310.15 K | 1.04 | nd | Zhao and others 2009 |
| Daidzein | Isoflavone | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:25 | $5.42x10^4$, 310 K | 1.04 | nd | Xiao and others 2009 |
| Daidzein | Isoflavone | BSA fluorescence quenching | pH 7.4 | $1.70x10^3$, 300.15 K | 0.77 | nd | Shi and Cao 2011 |
| Daidzin | Isoflavone glycoside | BSA fluorescence quenching | pH 7, up to BSA: ligand ratio 1:25 | $5.58\times10^3$, 310.15 K | 0.88 | nd | Zhao and others 2009 |
| Daidzin | Isoflavone glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:25 | $5.58x10^3$, 310 K | 0.88 | nd | Xiao and others 2009 |
| Biochanin A | Isoflavone | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:1 | $5.01x10^4$, RT | 0.84 | nd | Awasthi and others 2014 |
| Biochanin A | Isoflavone | BSA fluorescence quenching | pH 7.4 | $1.00x10^5$, 300.15 K | 1.09 | nd | Shi and Cao 2011 |

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|---|---|---|---|---|---|---|---|
| Tectorigenin | Isoflavone | BSA fluorescence quenching | pH 7.4 | $2.57x10^5$, 300.15 K | 1.09 | nd | Shi and Cao 2011 |
| Puerarin | Isoflavone glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:100 | $1.13\times10^4$, 293 K | 0.93 | nd | Xiao and others 2007b |
| Puerarin | Isoflavone glycoside | Isothermal titration calorimetry, single site binding model | pH 7.4, up to BSA: ligand ratio 1:16 | $1.44x10^3$, 298 K | 1.02 | nd | Xi and Fan 2010 |
| Puerarin | Isoflavone glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:40 | $1.58x10^3$, 310 K | 0.73 | nd | Xiao and others 2009 |
| Puerarin | Isoflavone glycoside | BSA fluorescence quenching | pH 7.4 | $5.37x10^3$, 300.15 K | 0.88 | nd | Shi and Cao 2011 |
| Calycosin | Isoflavone | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:15 | $5.59x10^4$, 298 K | 0.97 | nd | Liu and others 2010a |
| Calycosin-7-O-β-D-glucoside | Isoflavone glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:15 | $1.89x10^4$, 298 K | 0.96 | nd | Liu and others 2010a |
| Naringenin | Flavanone | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:1.2 | $4.08x10^4$, 291 K | 0.96 | nd | Bi and others 2012 |
| Naringenin | Flavanone | BSA fluorescence quenching | pH 7.5 | $3.1x10^5$, 298 K | 0.99 | nd | Skrt and others 2012 |
| Naringenin | Flavanone | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:5.18 | $3.04x10^5$, 298 K | 1.06 | nd | Liu and others 2014 |
| Naringenin | Flavanone | BSA fluorescence quenching | pH 7.4 | $1.05x10^5$, 300.15 K | 1.03 | nd | Shi and Cao 2011 |
| Naringin | Flavanone glycoside | BSA fluorescence quenching | pH 7.4 | $3.55x10^3$, 300.15 K | 0.81 | nd | Shi and Cao 2011 |
| Naringin | Flavanone glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:4.15 | $8.70x10^2$, 298 K | 0.63 | nd | Liu and others 2014 |
| Hesperetin | Flavanone | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:1.2 | $5.40x10^4$, 291 K | 1.29 | nd | Bi and others 2012 |

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|---|---|---|---|---|---|---|---|
| Hesperetin | Flavanone | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:5.18 | $5.59x10^5$, 298 K | 1.08 | nd | Liu and others 2014 |
| Hesperetin | Flavanone | BSA fluorescence quenching | pH 7, up to BSA: ligand ratio 1:0.1 | $3.02\times10^4$, 295 K | 0.83 | nd | Shang and Li 2011 |
| Hesperidin | Flavanone glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:3.73 | $2.50x10^3$, 298 K | 0.74 | nd | Liu and others 2014 |
| Hesperidin | Flavanone glycoside | BSA fluorescence quenching | pH 7, up to BSA: ligand ratio 1:0.1 | $9.89\times10^4$, 295 K | 1.02 | nd | Shang and Li 2011 |
| Dihydromyricetin | Flavanone | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:70 | $1.30x10^5$, 300 K | 1.11 | nd | Guo and others 2014 |
| Dihydromyricetin | Flavanone | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:2 | $1.36x10^4$, 310 K | 0.99 | nd | Liu and others 2010b |
| Liquiritigenin | Flavanone | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:6.7 | $1.8x10^4$, 298 K | 0.88 | nd | Hou and others 2017 |
| Isoliquiritigenin | Flavanone | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:6.7 | $2.52x10^5$, 298 K | 1.04 | nd | Hou and others 2017 |
| Liquiritin | Flavanone | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:6.7 | $2.7x10^4$, 298 K | 0.94 | nd | Hou and others 2017 |
| Liquiritin apioside | Flavanone glycoside | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:6.7 | $4.8x10^4$, 298 K | 0.95 | nd | Hou and others 2017 |
| GCG | Flavanonol | BSA fluorescence quenching | pH 7.4 | $2.29x10^4$, 300.15 K | 0.96 | nd | Shi and Cao 2011 |
| EGCG | Flavanonol | BSA fluorescence quenching | pH 7.5 | $1.4x10^6$, 298 K | 0.98 | nd | Skrt and others 2012 |
| EGCG | Flavanonol | BSA fluorescence quenching | pH 7.4 | $1.74x10^6$, 300.15 K | 1.20 | nd | Shi and Cao 2011 |
| EGCG | Flavanonol | Quartz crystal microbalance with dissipation monitoring | pH 7, 4.9 and 3 | nd | nd | nd | Wang and others 2007 |

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|---|---|---|---|---|---|---|---|
| EGCG | Flavanonol | Complex formation by size-exclusion chromatography | pH 7 and 4, up to BSA: ligand ratio 1:0.25(w/w) | nd | nd | nd | Hatano and others 2003 |
| EGCG | Flavanonol | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:8.33 | $4.61x10^{6}$, 295 K | nd | nd | Li and Hagerman 2014 |
| EGCG | Flavanonol | Induced circular dichroism | pH 7.0, up to BSA: ligand ratio 1:2.9 | nd | nd | nd | Nozaki and others 2009 |
| ECG | Flavanonol | BSA fluorescence quenching | pH 7.5 | $1.5x10^{6}$, 298 K | 0.90 | nd | Skrt and others 2012 |
| ECG | Flavanonol | BSA fluorescence quenching | pH 7.4 | $6.46x10^{6}$, 300.15 K | 1.27 | nd | Shi and Cao 2011 |
| ECG | Flavanonol | Isothermal titration calorimetry, single site binding model | pH 6.7, up to BSA: ligand ratio 1:2.25 | $2.70x10^{5}$, 298 K | 1.03 | nd | Pal and others 2012 |
| EGC | Flavanonol | BSA fluorescence quenching | pH 7.5 | $1.4x10^{5}$, 298 K | 0.40 | nd | Skrt and others 2012 |
| EC | Flavanonol | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:50 | $4.57x10^{3}$, 288 K | 0.88 | nd | Zhai and others 2014 |
| EC | Flavanonol | Isothermal titration calorimetry, single site binding model | pH 6.7, up to BSA: ligand ratio 1:2.25 | $9.68x10^{4}$, 298 K | 0.937 | nd | Pal and others 2012 |
| Catechin | Flavanonol | Equilibrium dialysis | pH 7.5 | $1.12x10^{7}$, 295 K | 3.46 | nd | Mitra 2012 |
| Tea catechins | Flavanonols | Isothermal titration calorimetry, multiple binding sites model | pH 6, up to BSA: ligand ratio 1:150 | $1.36x10^{2}$, 298 K | 18.5 | nd | Frazier and others 2010 |
| Resveratrol | Stilbene | Enhancement of ligand fluorescence, Scatchard analysis | pH 7.4, up to BSA: ligand ratio 1:90 | $8.62x10^{5}$, 298 K | 1.1 | nd | Latruffe and others 2014 |
| Transresverat | Stilbene | BSA fluorescence | pH 7.4, up to | $8.71x10^{4}$, 297 K | 1.03 | nd | Liu and others 2013 |

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|---|---|---|---|---|---|---|---|
| rol | | quenching | BSA: ligand ratio 1:8 | | | | |
| Transresveratrol | Stilbene | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:90 | $1.27\times10^{5}$, 293.15 K | 1.22 | nd | Xiao and others 2008a |
| Chlorogenic acid | Phenolic acid | BSA fluorescence quenching | pH 7.8, up to BSA: ligand ratio 1:10 | $7.90x10^{4}$, 298 K | 0.96 | nd | He and others 2010 |
| Chlorogenic acid | Phenolic acid | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:30 | $9.20x10^{4}$, 298 K | 0.99 | nd | Jin and others 2012 |
| Chlorogenic acid | Phenolic acid | Analytical ultracentrifugation | pH 7.0, up to BSA: ligand ratio 1:95 | nd | nd | nd | Seifert and others 2004 |
| Chlorogenic acid | Phenolic acid | BSA fluorescence quenching | pH 7, up to BSA: ligand ratio 1:10 | $4.29\times10^{6}$, 298 K | 1.00 | nd | Xiao and others 2016 |
| Chlorogenic acid | Phenolic acid | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:10 | $6.67x10^{5}$, 310 K | 1.23 | nd | Trnková and others 2010 |
| Chlorogenic acid | Phenolic acid | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:8 | $9.4x10^{4}$, 298 K | 1.09 | nd | Tang and others 2008 |
| Caffeic acid | Phenolic acid | BSA fluorescence quenching | pH 7.8, up to BSA: ligand ratio 1:10 | $6.17x10^{4}$, 298 K | 0.93 | nd | He and others 2010 |
| caffeic acid | Phenolic acid | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:10 | $4.16x10^{5}$, 310 K | 1.18 | nd | Trnková and others 2010 |
| Caffeic acid | Phenolic acid | BSA fluorescence quenching | pH 7.5 | $3.0x10^{5}$, 298 K | 0.41 | nd | Skrt and others 2012 |
| Caffeic acid | Phenolic acid | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:30 | $6.07x10^{4}$, 298 K | 1.00 | nd | Jin and others 2012 |
| methyl 3,4-di-O-caffeoylquinate | Phenolic acid | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:8 | $3.81x10^{6}$, 298 K | 1.27 | nd | Tang and others 2008 |
| methyl 3,5-di-O-caffeoylquina | Phenolic acid | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:8 | $1.29x10^{6}$, 298 K | 1.21 | nd | Tang and others 2008 |

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| te | | | | | | | |
| 3,4-di-O-caffeoylquinic acid | Phenolic acid | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:8 | $1.25x10^{6}$, 298 K | 1.21 | nd | Tang and others 2008 |
| 3,5-di-O-caffeoylquinic acid | Phenolic acid | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:8 | $8.59x10^{5}$, 298 K | 1.19 | nd | Tang and others 2008 |
| Ferulic acid | Phenolic acid | BSA fluorescence quenching | pH 7.8, up to BSA: ligand ratio 1:10 | $5.09x10^{4}$, 298 K | 0.91 | nd | He and others 2010 |
| Ferulic acid | Phenolic acid | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:30 | $0.51x10^{4}$, 298 K | 0.82 | nd | Jin and others 2012 |
| ferulic acid | Phenolic acid | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:10 | $3.39x10^{5}$, 310 K | 1.18 | nd | Trnková and others 2010 |
| o-coumaric acid | Phenolic acid | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:10 | $3.34x10^{5}$, 310 K | 1.17 | nd | Trnková and others 2010 |
| m-coumaric acid | Phenolic acid | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:10 | $1.31x10^{5}$, 310 K | 1.08 | nd | Trnková and others 2010 |
| m-coumaric acid | Phenolic acid | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:30 | $1.14x10^{4}$, 298 K | 0.86 | nd | Jin and others 2012 |
| p-coumaric acid | Phenolic acid | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:30 | $1.08x10^{4}$, 298 K | 0.84 | nd | Jin and others 2012 |
| p-Coumaric acid | Phenolic acid | BSA fluorescence quenching | pH 7.5 | $4.0x10^{5}$, 298 K | 0.45 | nd | Skrt and others 2012 |
| p-coumaric acid | Phenolic acid | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:10 | $1.81x10^{5}$, 310 K | 1.10 | nd | Trnková and others 2010 |
| Cinnamic acid | Phenolic acid | BSA fluorescence quenching | pH 7.8, up to BSA: ligand ratio 1:10 | $2.52x10^{4}$, 298 K | 0.84 | nd | He and others 2010 |
| Sinapic acid | Phenolic acid | BSA fluorescence quenching | pH 7.4, up to BSA: ligand ratio 1:30 | $0.17x10^{4}$, 298 K | 0.74 | nd | Jin and others 2012 |
| sinapic acid | Phenolic | BSA fluorescence | pH 7.4, up to | $4.19x10^{5}$, 310 K | 1.21 | nd | Trnková and others |

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| | acid | quenching | BSA: ligand ratio 1:10 | | | | 2010 |
| Rosmarinic acid | Phenolic acid | BSA fluorescence quenching | pH 7.5 | $3.2x10^5$, 298 K | 0.92 | nd | Skrt and others 2012 |
| Delphinidin-3-O-glucoside | Anthocyanin | BSA fluorescence quenching | pH 7, up to BSA: ligand ratio 1:5 | 1.98x105, 298 K | 1.10 | nd | Zuo and others 2015 |
| Tannic acid | Hydrolyzable tannins | Protein precipitation by spectrophotometry | pH 2 to 7 | nd | nd | yes | Arimboor and Arumughan 2011 |
| Tannic acid | Hydrolyzable tannins | Isothermal titration calorimetry, single site binding model | pH 6.75, up to BSA: ligand ratio 1:140 | $2.7x10^4$, 298 K | 14 | nd | Pripp and others 2005 |
| Ellagitannin monomer | Hydrolyzable tannins | Isothermal titration calorimetry, single site binding model | pH 6, up to BSA: ligand ratio 1:28 | $1.84x10^4$, 298 K | 6 | nd | Karonen and others 2015 |
| Ellagitannin dimer | Hydrolyzable tannins | Isothermal titration calorimetry, single site binding model | pH 6, up to BSA: ligand ratio 1:28 | $2.39x10^3$, 298 K | 21 | nd | Karonen and others 2015 |
| Ellagitannin trimer | Hydrolyzable tannins | Isothermal titration calorimetry, single site binding model | pH 6, up to BSA: ligand ratio 1:28 | $2.52x10^3$, 298 K | 30 | nd | Karonen and others 2015 |
| Ellagitannin pentamer | Hydrolyzable tannins | Isothermal titration calorimetry, single site binding model | pH 6, up to BSA: ligand ratio 1:28 | $4.65x10^3$, 298 K | 46 | nd | Karonen and others 2015 |
| Ellagitannin octamer-undecamers | Hydrolyzable tannin | Isothermal titration calorimetry, single site binding model | pH 6, up to BSA: ligand ratio 1:28 | $5.12x10^3$, 298 K | 85 | nd | Karonen and others 2015 |
| Myrabolan ellagitannins | Hydrolyzable tannins | Isothermal titration calorimetry, single site binding model | pH 6, up to BSA: ligand ratio 1:300 | $7.0x10^2$, 298 K | 22 | nd | Deaville and others 2007 |
| Sumac | Hydrolyzab | Isothermal titration | pH 6, up to | $1.7x10^5$, 298 K | 9.4 | nd | Deaville and others |

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| gallotannins | le tannin | calorimetry, single site binding model | BSA: ligand ratio 1:350 | | | | 2007 |
| Gallotannin analogs chemically synthesized | Hydrolyzable tannins | Equilibrium dialysis | pH 2.25 | nd | nd | nd | Feldman and others 1999 |
| Gallotannins | Hydrolyzable tannins | Determination of remained free polyphenol after complex precipitation | BSA: ligand ratio 1:0.2 (w/w) | nd | nd | nd | He and others 2006 |
| Pentagalloyl glucose | Hydrolyzable tannins | Isothermal titration calorimetry, single site binding model | pH 6, up to BSA: ligand ratio 1:55 | $2.2x10^5$, 298 K | 16.5 | nd | Deaville and others 2007 |
| Tannin, MW 1701 | Condensed tannin | Electrochemical quartz-crystal impedance system | pH 5.1 | nd | 2 | nd | Zhang and others 2005 |
| Proanthocyanidin tetramer | Condensed tannins | Isothermal titration calorimetry, single site binding model | pH 4, up to BSA: ligand ratio 1:100 | $6.28x10^3$, 283 K | 53 | nd | Kilmister and others 2016 |
| Proanthocyanidin pentamer | Condensed tannins | Isothermal titration calorimetry, single site binding model | pH 4, up to BSA: ligand ratio 1:100 | $9.96x10^3$, 283 K | 34 | nd | Kilmister and others 2016 |
| Proanthocyanidin hexamer | Condensed tannins | Isothermal titration calorimetry, single site binding model | pH 4, up to BSA: ligand ratio 1:100 | $1.71x10^4$, 283 K | 21 | nd | Kilmister and others 2016 |
| Proanthocyanidin octamer | Condensed tannins | Isothermal titration calorimetry, single site binding model | pH 4, up to BSA: ligand ratio 1:100 | $1.40x10^4$, 283 K | 18 | nd | Kilmister and others 2016 |
| Mimosa 5-deoxy | Condensed tannins | Isothermal titration calorimetry, | pH 6, up to BSA: ligand ratio 1:150 | $5.9x10^3$, 298 K | 39 | nd | Frazier and others 2010 |

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| proanthocyanidins | | multiple binding sites model | | | | | |
| Grape seed proanthocyanidins | Condensed tannin | Isothermal titration calorimetry, multiple binding sites model | pH 6, up to BSA: ligand ratio 1:150 | $1.5x10^3$, 298 K | 7 | nd | Frazier and others 2010 |
| Sorghum procyanidins | Condensed tannins | Isothermal titration calorimetry, multiple binding sites model | pH 6, up to BSA: ligand ratio 1:150 | $3.3x10^4$, 298 K | 11 | nd | Frazier and others 2010 |
| Sea buckthorn kernel proanthocyanidins | Condensed tannins | Protein precipitation by spectrophotometry | pH 2 to 7 | nd | nd | yes | Arimboor and Arumughan 2011 |
| Condensed tannins from 35 different sources | Condensed tannins | Protein aggregation by turbidimetry | pH 6.0, up to BSA: ligand ratio 1: | nd | nd | nd | Ropiak and others 2017 |
| Flos Lonicerae Japonicae | Mixture | Microdialysis coupled with HPLC-DAD-MS | pH 7.4 | nd | nd | nd | Qian and others 2008b |
| Red wines | Mixture | Protein precipitation by spectrophotometry | pH 4.9 | nd | nd | nd | Kemp and others 2011 |
| Flos Lonicerae Japonicae extract | Mixture | Binding degree by centrifugal ultrafiltration coupled with HPLC | pH 7.4 and 6.2 | nd | nd | nd | Qian and others 2008 |

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