(A) ORR (Type of ginseng and its ingredients)

Study or Subgroup	Ginseng + Chemo Events	Total	Chemo Events	Total	Weight	Risk Ratio M-H, Random, 95% CI	Risk Ratio M-H, Random, 95% CI
1.1.1 Ginseng polysaccharide							
Ge 2015	38	65	27	65	49.5%	1.41 [0.99, 2.00]	
Li 2013	24	40	18	40	34.1%	1.33 [0.87, 2.04]	
Tu 2016	17	60	13	48	16.4%	1.05 [0.57, 1.93]	
Subtotal (95% CI)		165		153	100.0%	1.32 [1.03, 1.69]	
Total events	79		58				
Heterogeneity: Tau² = 0.00; Chi² = 0.69, df = 2 (P = 0.71); I² = 0%							
Test for overall effect: Z = 2.16 (P = 0.03)							
1.1.2 Ginsenoside							
Chen 2014	18	34	12	34	4.3%	1.50 [0.86, 2.61]	
Du 2014	12	30	9	30	2.7%	1.33 [0.66, 2.69]	
Gu 2017	38	46	31	46	22.7%	1.23 [0.96, 1.56]	
Guan 2016	15	32	10	30	3.4%	1.41 [0.75, 2.63]	
Li 2012	19	39	14	38	4.7%	1.32 [0.78, 2.24]	
Liu 2007	13	35	11	35	3.1%	1.18 [0.62, 2.27]	
Liu 2009	14	34	5	30	1.6%	2.47 [1.01, 6.05]	
Liu 2012	13	49	11	48	2.7%	1.16 [0.58, 2.33]	
Liu 2015	51	60	34	60	21.8%	1.50 [1.17, 1.92]	
Liu 2016a	18	60	16	60	4.0%	1.13 [0.64, 1.99]	
Liu 2016b	24	45	14	45	5.0%	1.71 [1.03, 2.86]	
Pan 2016	13	24	14	24	5.3%	0.93 [0.56, 1.53]	
Qi 2011	11	35	8	35	2.2%	1.38 [0.63, 3.00]	
Shao 2013	8	33	8	35	1.8%	1.06 [0.45, 2.50]	
Shen 2018	12	25	5	27	1.7%	2.59 [1.06, 6.31]	
Shi 2006	10	22	3	19	1.0%	2.88 [0.93, 8.95]	
Yang 2014	6	15	5	14	1.5%	1.12 [0.44, 2.86]	
Zhang 2020	30	41	21	41	10.6%	1.43 [1.01, 2.03]	
Subtotal (95% CI)		659		651	100.0%	1.36 [1.22, 1.53]	
Total events	325		231				
Heterogeneity: Tau² = 0.00; Chi² = 11.40, df = 17 (P = 0.84); I² = 0%							
Test for overall effect: Z = 5.30 (P < 0.00001)							
1.1.3 Ginseng							
Li 2015	23	47	19	38	100.0%	0.98 [0.64, 1.51]	
Subtotal (95% CI)		47		38	100.0%	0.98 [0.64, 1.51]	
Total events	23		19				
Heterogeneity: Not applicable							
Test for overall effect: Z = 0.10 (P = 0.92)							

0.02 0.1 1 10 50
Favours Chemo   Favours Ginseng + Chemo

Test for subgroup differences: Chi² = 2.13, df = 2 (P = 0.35), I² = 6.0%

(B) ORR (Type of chemotherapy)

Study or Subgroup	Ginsenoside+ Chemo Events	Total	Chemo Events	Total	Weight	Risk Ratio M-H, Random, 95% CI	Risk Ratio M-H, Random, 95% CI
2.1.1 Non-platinum-based							
Liu 2012	13	49	11	48	2.7%	1.16 [0.58, 2.33]	
Liu 2016b	24	45	14	45	5.0%	1.71 [1.03, 2.86]	
Pan 2016	13	24	14	24	5.2%	0.93 [0.56, 1.53]	
Shao 2013	8	33	8	35	1.8%	1.06 [0.45, 2.50]	
Yang 2014	6	15	5	14	1.5%	1.12 [0.44, 2.86]	
Subtotal (95% CI)		166		166	16.2%	1.20 [0.90, 1.60]	
Total events	64		52				
Heterogeneity: Tau² = 0.00; Chi² = 3.00, df = 4 (P = 0.56); I² = 0%							
Test for overall effect: Z = 1.26 (P = 0.21)							
2.1.2 Platinum-based							
Chen 2014	18	34	12	34	4.3%	1.50 [0.86, 2.61]	
Du 2014	12	30	9	30	2.7%	1.33 [0.66, 2.69]	
Gu 2017	38	46	31	46	22.6%	1.23 [0.96, 1.56]	
Guan 2016	15	32	10	30	3.3%	1.41 [0.75, 2.63]	
Li 2012	19	39	14	38	4.7%	1.32 [0.78, 2.24]	
Liu 2007	13	35	11	35	3.1%	1.18 [0.62, 2.27]	
Liu 2009	14	34	6	30	1.9%	2.06 [0.91, 4.68]	
Liu 2015	51	60	34	60	21.7%	1.50 [1.17, 1.92]	
Liu 2016a	18	60	16	60	4.0%	1.13 [0.64, 1.99]	
Qi 2011	11	35	8	35	2.1%	1.38 [0.63, 3.00]	
Shen 2018	12	25	5	27	1.7%	2.59 [1.06, 6.31]	
Shi 2006	10	22	3	19	1.0%	2.88 [0.93, 8.95]	
Zhang 2020	30	41	21	41	10.6%	1.43 [1.01, 2.03]	
Subtotal (95% CI)		493		485	83.8%	1.39 [1.23, 1.58]	
Total events	261		180				
Heterogeneity: Tau² = 0.00; Chi² = 6.84, df = 12 (P = 0.87); I² = 0%							
Test for overall effect: Z = 5.21 (P < 0.00001)							
Total (95% CI)		659		651	100.0%	1.36 [1.21, 1.53]	
Total events	325		232				
Heterogeneity: Tau² = 0.00; Chi² = 10.64, df = 17 (P = 0.87); I² = 0%							
Test for overall effect: Z = 5.28 (P < 0.00001)							

0.02 0.1 1 10 50
Favours Chemo   Favours Ginsenoside+ Chemo

Test for subgroup differences: Chi² = 0.89, df = 1 (P = 0.34), I² = 0%

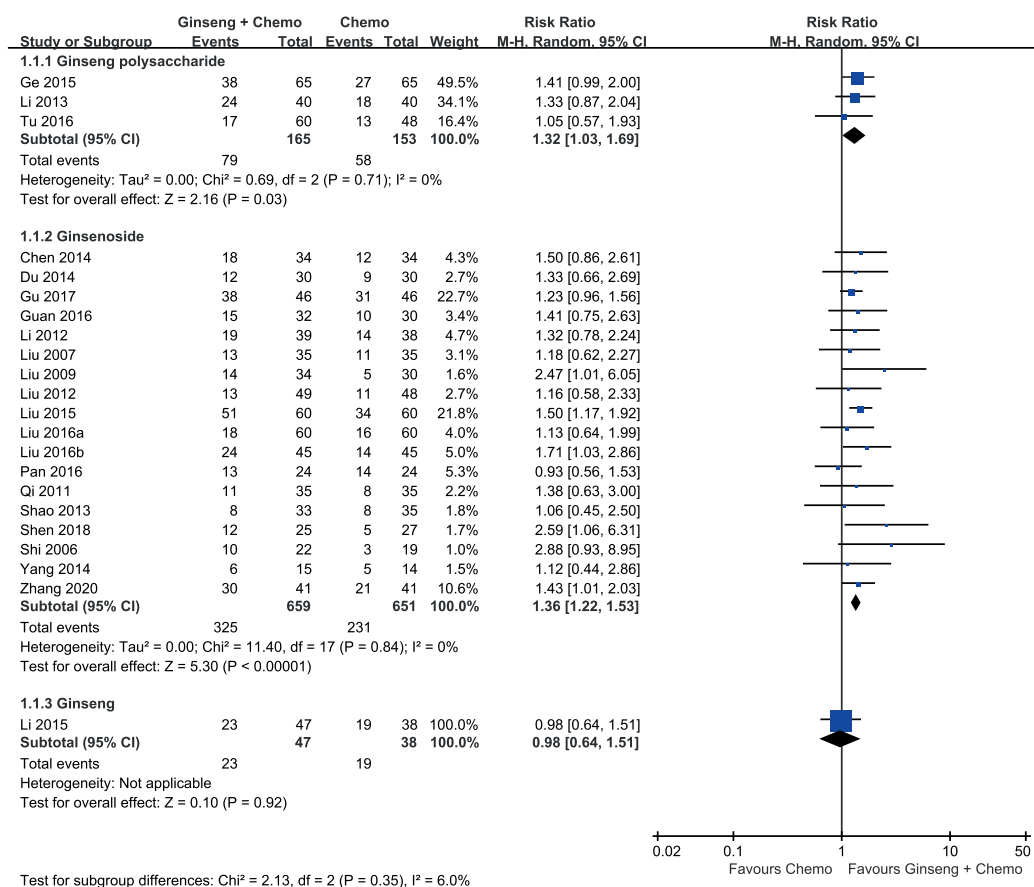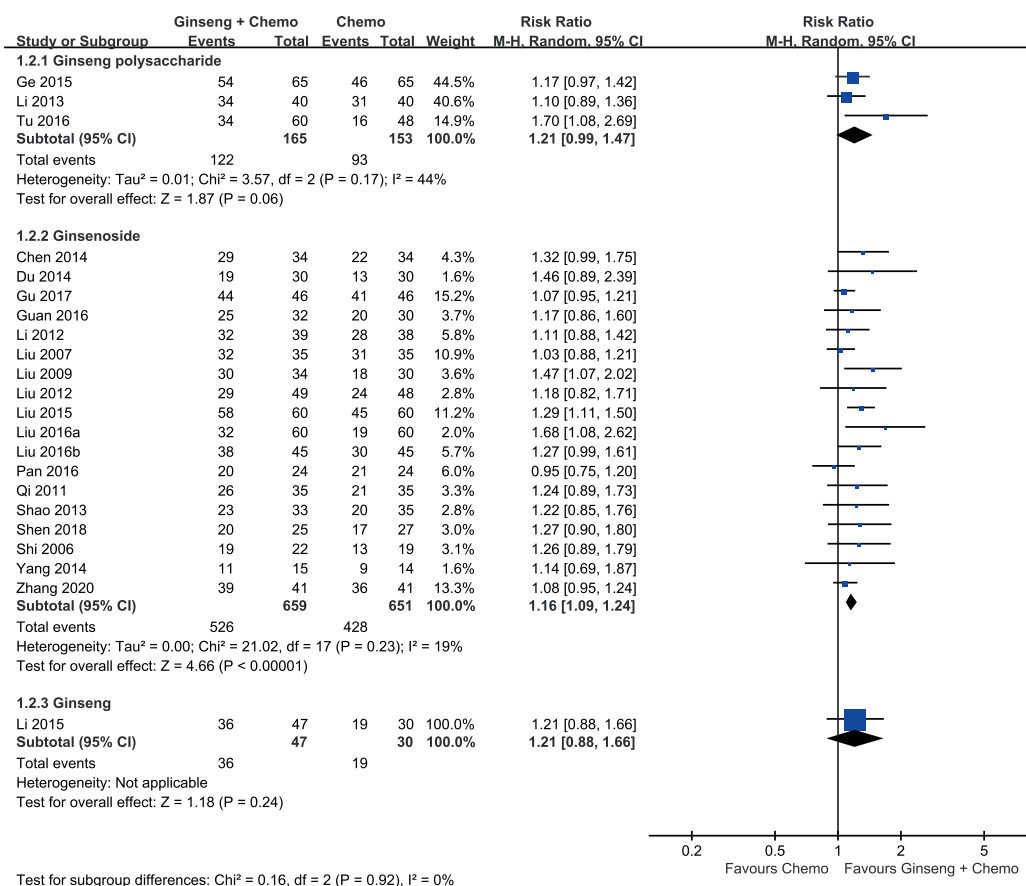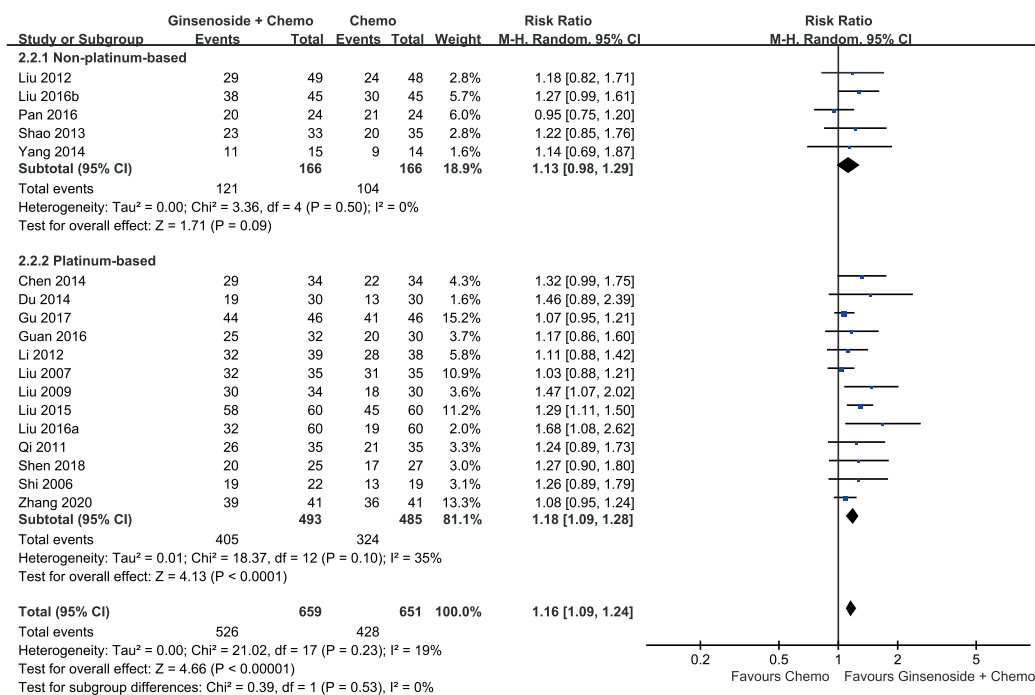**Supplementary 1.** Forest plots of objective response rate (ORR) for subgroups: (A) types of ginseng and its ingredients, (B) types of chemotherapy
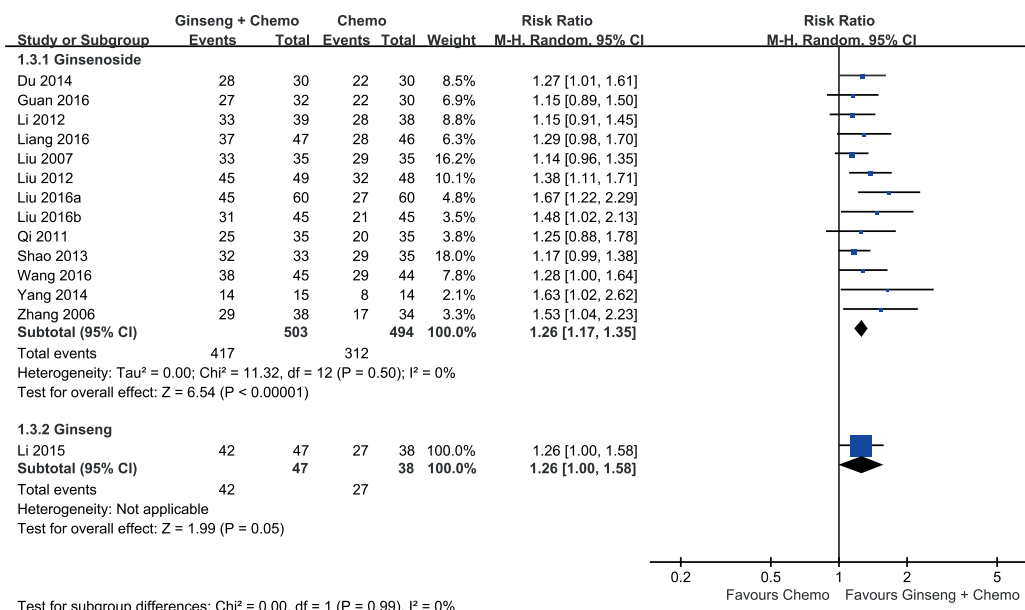
(A) DCR (Type of ginseng and its ingredients)

Study or Subgroup	Ginseng + Chemo Events	Total	Chemo Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
1.2.1 Ginseng polysaccharide						
Ge 2015	54	65	46	65	44.5%	1.17 [0.97, 1.42]
Li 2013	34	40	31	40	40.6%	1.10 [0.89, 1.36]
Tu 2016	34	60	16	48	14.9%	1.70 [1.08, 2.69]
Subtotal (95% CI)		165		153	100.0%	1.21 [0.99, 1.47]
Total events	122		93			
Heterogeneity: Tau² = 0.01; Chi² = 3.57, df = 2 (P = 0.17); I² = 44%						
Test for overall effect: Z = 1.87 (P = 0.06)						
1.2.2 Ginsenoside						
Chen 2014	29	34	22	34	4.3%	1.32 [0.99, 1.75]
Du 2014	19	30	13	30	1.6%	1.46 [0.89, 2.39]
Gu 2017	44	46	41	46	15.2%	1.07 [0.95, 1.21]
Guan 2016	25	32	20	30	3.7%	1.17 [0.86, 1.60]
Li 2012	32	39	28	38	5.8%	1.11 [0.88, 1.42]
Liu 2007	32	35	31	35	10.9%	1.03 [0.88, 1.21]
Liu 2009	30	34	18	30	3.6%	1.47 [1.07, 2.02]
Liu 2012	29	49	24	48	2.8%	1.18 [0.82, 1.71]
Liu 2015	58	60	45	60	11.2%	1.29 [1.11, 1.50]
Liu 2016a	32	60	19	60	2.0%	1.68 [1.08, 2.62]
Liu 2016b	38	45	30	45	5.7%	1.27 [0.99, 1.61]
Pan 2016	20	24	21	24	6.0%	0.95 [0.75, 1.20]
Qi 2011	26	35	21	35	3.3%	1.24 [0.89, 1.73]
Shao 2013	23	33	20	35	2.8%	1.22 [0.85, 1.76]
Shen 2018	20	25	17	27	3.0%	1.27 [0.90, 1.80]
Shi 2006	19	22	13	19	3.1%	1.26 [0.89, 1.79]
Yang 2014	11	15	9	14	1.6%	1.14 [0.69, 1.87]
Zhang 2020	39	41	36	41	13.3%	1.08 [0.95, 1.24]
Subtotal (95% CI)		659		651	100.0%	1.16 [1.09, 1.24]
Total events	526		428			
Heterogeneity: Tau² = 0.00; Chi² = 21.02, df = 17 (P = 0.23); I² = 19%						
Test for overall effect: Z = 4.66 (P < 0.00001)						
1.2.3 Ginseng						
Li 2015	36	47	19	30	100.0%	1.21 [0.88, 1.66]
Subtotal (95% CI)		47		30	100.0%	1.21 [0.88, 1.66]
Total events	36		19			
Heterogeneity: Not applicable						
Test for overall effect: Z = 1.18 (P = 0.24)						

0.2 0.5 1 2 5
Favours Chemo Favours Ginseng + Chemo

Test for subgroup differences: Chi² = 0.16, df = 2 (P = 0.92), I² = 0%

(B) DCR (Type of chemotherapy)

Study or Subgroup	Ginsenoside + Chemo Events	Total	Chemo Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
2.2.1 Non-platinum-based						
Liu 2012	29	49	24	48	2.8%	1.18 [0.82, 1.71]
Liu 2016b	38	45	30	45	5.7%	1.27 [0.99, 1.61]
Pan 2016	20	24	21	24	6.0%	0.95 [0.75, 1.20]
Shao 2013	23	33	20	35	2.8%	1.22 [0.85, 1.76]
Yang 2014	11	15	9	14	1.6%	1.14 [0.69, 1.87]
Subtotal (95% CI)		166		166	18.9%	1.13 [0.98, 1.29]
Total events	121		104			
Heterogeneity: Tau² = 0.00; Chi² = 3.36, df = 4 (P = 0.50); I² = 0%						
Test for overall effect: Z = 1.71 (P = 0.09)						
2.2.2 Platinum-based						
Chen 2014	29	34	22	34	4.3%	1.32 [0.99, 1.75]
Du 2014	19	30	13	30	1.6%	1.46 [0.89, 2.39]
Gu 2017	44	46	41	46	15.2%	1.07 [0.95, 1.21]
Guan 2016	25	32	20	30	3.7%	1.17 [0.86, 1.60]
Li 2012	32	39	28	38	5.8%	1.11 [0.88, 1.42]
Liu 2007	32	35	31	35	10.9%	1.03 [0.88, 1.21]
Liu 2009	30	34	18	30	3.6%	1.47 [1.07, 2.02]
Liu 2015	58	60	45	60	11.2%	1.29 [1.11, 1.50]
Liu 2016a	32	60	19	60	2.0%	1.68 [1.08, 2.62]
Qi 2011	26	35	21	35	3.3%	1.24 [0.89, 1.73]
Shen 2018	20	25	17	27	3.0%	1.27 [0.90, 1.80]
Shi 2006	19	22	13	19	3.1%	1.26 [0.89, 1.79]
Zhang 2020	39	41	36	41	13.3%	1.08 [0.95, 1.24]
Subtotal (95% CI)		493		485	81.1%	1.18 [1.09, 1.28]
Total events	405		324			
Heterogeneity: Tau² = 0.01; Chi² = 18.37, df = 12 (P = 0.10); I² = 35%						
Test for overall effect: Z = 4.13 (P < 0.0001)						
Total (95% CI)		659		651	100.0%	1.16 [1.09, 1.24]
Total events	526		428			
Heterogeneity: Tau² = 0.00; Chi² = 21.02, df = 17 (P = 0.23); I² = 19%						
Test for overall effect: Z = 4.66 (P < 0.00001)						
Test for subgroup differences: Chi² = 0.39, df = 1 (P = 0.53), I² = 0%						

0.2 0.5 1 2 5
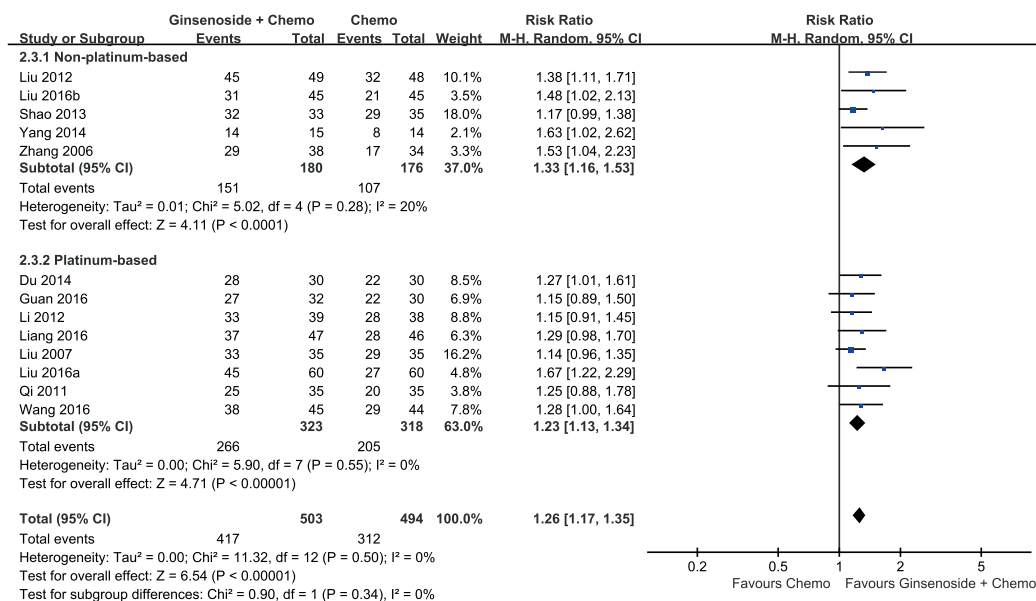Favours Chemo Favours Ginsenoside + Chemo

Supplementary 2. Forest plots of disease control rate (DCR) for subgroups: (A) types of ginseng and its ingredients and (B) types of chemotherapy

(A) KPS (Type of ginseng and its ingredients)

Study or Subgroup	Ginseng + Chemo Events	Total	Chemo Events	Total	Weight	Risk Ratio M-H, Random, 95% CI	Risk Ratio M-H, Random, 95% CI
1.3.1 Ginsenoside							
Du 2014	28	30	22	30	8.5%	1.27 [1.01, 1.61]	
Guan 2016	27	32	22	30	6.9%	1.15 [0.89, 1.50]	
Li 2012	33	39	28	38	8.8%	1.15 [0.91, 1.45]	
Liang 2016	37	47	28	46	6.3%	1.29 [0.98, 1.70]	
Liu 2007	33	35	29	35	16.2%	1.14 [0.96, 1.35]	
Liu 2012	45	49	32	48	10.1%	1.38 [1.11, 1.71]	
Liu 2016a	45	60	27	60	4.8%	1.67 [1.22, 2.29]	
Liu 2016b	31	45	21	45	3.5%	1.48 [1.02, 2.13]	
Qi 2011	25	35	20	35	3.8%	1.25 [0.88, 1.78]	
Shao 2013	32	33	29	35	18.0%	1.17 [0.99, 1.38]	
Wang 2016	38	45	29	44	7.8%	1.28 [1.00, 1.64]	
Yang 2014	14	15	8	14	2.1%	1.63 [1.02, 2.62]	
Zhang 2006	29	38	17	34	3.3%	1.53 [1.04, 2.23]	
Subtotal (95% CI)		503		494	100.0%	1.26 [1.17, 1.35]	
Total events	417		312				

Heterogeneity: Tau² = 0.00; Chi² = 11.32, df = 12 (P = 0.50); I² = 0%
Test for overall effect: Z = 6.54 (P < 0.00001)

Study or Subgroup	Ginseng + Chemo Events	Total	Chemo Events	Total	Weight	Risk Ratio M-H, Random, 95% CI	Risk Ratio M-H, Random, 95% CI
1.3.2 Ginseng							
Li 2015	42	47	27	38	100.0%	1.26 [1.00, 1.58]	
Subtotal (95% CI)		47		38	100.0%	1.26 [1.00, 1.58]	
Total events	42		27				

Heterogeneity: Not applicable
Test for overall effect: Z = 1.99 (P = 0.05)

Test for subgroup differences: Chi² = 0.00, df = 1 (P = 0.99), I² = 0%

0.2 0.5 1 2 5
Favours Chemo   Favours Ginseng + Chemo

(B) KPS (Type of chemotherapy)

Study or Subgroup	Ginsenoside + Chemo Events	Total	Chemo Events	Total	Weight	Risk Ratio M-H, Random, 95% CI	Risk Ratio M-H, Random, 95% CI
2.3.1 Non-platinum-based							
Liu 2012	45	49	32	48	10.1%	1.38 [1.11, 1.71]	
Liu 2016b	31	45	21	45	3.5%	1.48 [1.02, 2.13]	
Shao 2013	32	33	29	35	18.0%	1.17 [0.99, 1.38]	
Yang 2014	14	15	8	14	2.1%	1.63 [1.02, 2.62]	
Zhang 2006	29	38	17	34	3.3%	1.53 [1.04, 2.23]	
Subtotal (95% CI)		180		176	37.0%	1.33 [1.16, 1.53]	
Total events	151		107				

Heterogeneity: Tau² = 0.01; Chi² = 5.02, df = 4 (P = 0.28); I² = 20%
Test for overall effect: Z = 4.11 (P < 0.0001)

Study or Subgroup	Ginsenoside + Chemo Events	Total	Chemo Events	Total	Weight	Risk Ratio M-H, Random, 95% CI	Risk Ratio M-H, Random, 95% CI
2.3.2 Platinum-based							
Du 2014	28	30	22	30	8.5%	1.27 [1.01, 1.61]	
Guan 2016	27	32	22	30	6.9%	1.15 [0.89, 1.50]	
Li 2012	33	39	28	38	8.8%	1.15 [0.91, 1.45]	
Liang 2016	37	47	28	46	6.3%	1.29 [0.98, 1.70]	
Liu 2007	33	35	29	35	16.2%	1.14 [0.96, 1.35]	
Liu 2016a	45	60	27	60	4.8%	1.67 [1.22, 2.29]	
Qi 2011	25	35	20	35	3.8%	1.25 [0.88, 1.78]	
Wang 2016	38	45	29	44	7.8%	1.28 [1.00, 1.64]	
Subtotal (95% CI)		323		318	63.0%	1.23 [1.13, 1.34]	
Total events	266		205				

Heterogeneity: Tau² = 0.00; Chi² = 5.90, df = 7 (P = 0.55); I² = 0%
Test for overall effect: Z = 4.71 (P < 0.00001)

Total (95% CI)		503		494	100.0%	1.26 [1.17, 1.35]	
Total events	417		312				

Heterogeneity: Tau² = 0.00; Chi² = 11.32, df = 12 (P = 0.50); I² = 0%
Test for overall effect: Z = 6.54 (P < 0.00001)
Test for subgroup differences: Chi² = 0.90, df = 1 (P = 0.34), I² = 0%

0.2 0.5 1 2 5
Favours Chemo   Favours Ginsenoside + Chemo

Supplementary 3. Forest plots of Karnofsky performance status (KPS) for subgroups: (A) types of ginseng and its ingredients, (B) types of chemotherapy