

**Supplemental Table 1.** Trials and treatment arms included in this analysis

| Trial          | Reference  | Treatment Group | Treatment | Patients |
|----------------|--|-----------------|-----------|----------|
| NCCTG-78-48-52 | Laurie, J. A., Moertel, C. G., Fleming, T. R., Wieand, H. S., Leigh, J. E., Rubin, J., ... Mailliard, J. (1989). Surgical adjuvant therapy of large-bowel carcinoma: an evaluation of levamisole and the combination of levamisole and fluorouracil. The North Central Cancer Treatment Group and the Mayo Clinic. <i>Journal of Clinical Oncology</i> , 7(10), 1447–1456. doi: 10.1200/jco.1989.7.10.1447 | 5FU             | 5FU+LEV   | 121      |
| NCCTG-87-46-51 | O'Connell, M. J., Mailliard, J. A., Kahn, M. J., Macdonald, J. S., Haller, D. G., Mayer, R. J., & Wieand, H. S. (1997). Controlled trial of fluorouracil and low-dose leucovorin given for 6 months as postoperative adjuvant therapy for colon cancer. <i>Journal of Clinical Oncology</i> , 15(1), 246–250. doi: 10.1200/jco.1997.15.1.246   | 5FU             | 5FU+LV    | 53       |
| INT-0035       | Moertel, C. G., Fleming, T. R., MacDonald, J. S., Haller, D. G., Laurie, J. A., Goodman, P. J., ... Mailliard, J. A. (1990). Levamisole and Fluorouracil for Adjuvant Therapy of Resected Colon Carcinoma. <i>The New England Journal of Medicine</i> , 322(6), 352–358.   | 5FU             | 5FU+LEV   | 457      |
| FFCD           | International Multicentre Pooled Analysis of Colon Cancer Trials (IMPACT) investigators (1995) Efficacy of adjuvant fluorouracil and folinic acid in colon cancer. <i>Lancet</i> , 345, 939-944  | 5FU             | 5FU+LV    | 127      |
| NCIC           | International Multicentre Pooled Analysis of Colon Cancer Trials (IMPACT) investigators (1995) Efficacy of adjuvant fluorouracil and folinic acid in colon cancer. <i>Lancet</i> , 345, 939-944  | 5FU             | 5FU+LV    | 180      |
| SIENA          | Francini, G., Petrioli, R., Lorenzini, L., Mancini, S., Armenio, S., Tanzini, G., ... Lorenzi, M. (1994). Folinic Acid and 5-Fluorouracil as Adjuvant Chemotherapy in Colon  | 5FU             | 5FU+LV    | 118      |

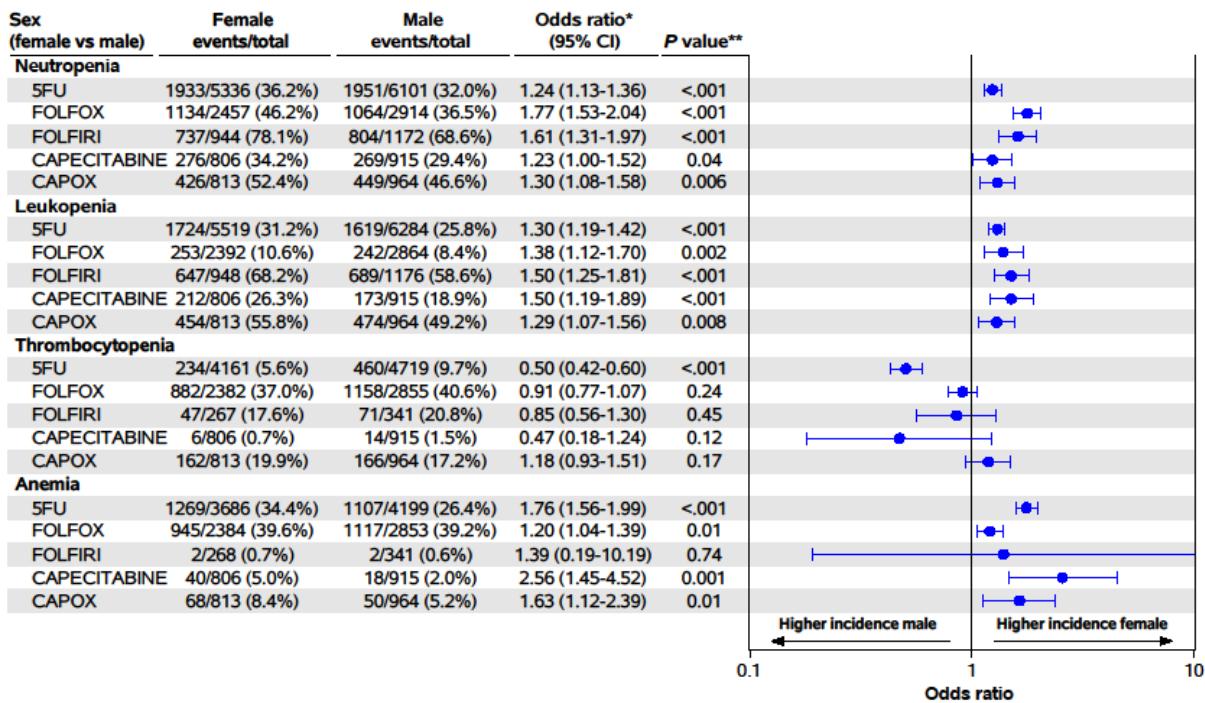
|                |   |     |                          |     |
|----------------|---|-----|--------------------------|-----|
|                | Cancer. <i>Gastroenterology</i> , 106(4), 899–906.  |     |                          |     |
| GIVIO          | International Multicentre Pooled Analysis of Colon Cancer Trials (IMPACT) investigators (1995) Efficacy of adjuvant fluorouracil and folinic acid in colon cancer. <i>Lancet</i> , 345, 939-944   | 5FU | 5FU+LV                   | 376 |
| NCCTG-89-46-51 | O'Connell, M. J., Laurie, J. A., Kahn, M., Fitzgibbons, R. J., Erlichman, C., Sheperd, L., ... Figueiredo, A. (1998). Prospectively Randomized Trial of Postoperative Adjuvant Chemotherapy in Patients With High-Risk Colon Cancer. <i>Journal of Clinical Oncology</i> , 16(1), 295–300.  | 5FU | 5FU+LEV x 1yr            | 228 |
|                |   | 5FU | 5FU+LEV x 6 mos          | 230 |
|                |   | 5FU | 5FU+LEV+LV x 1yr         | 232 |
|                |   | 5FU | 5FU+LEV+LV x 6 mos       | 225 |
| NCCTG-91-46-53 | Oconnell, M. J., Sargent, D. J., Windschitl, H. E., Shepherd, L., Mahoney, M. R., Krook, J. E., ... Kugler, J. W. (2006). Randomized Clinical Trial of High-Dose Levamisole Combined with 5-Fluorouracil and Leucovorin as Surgical Adjuvant Therapy for High-Risk Colon Cancer. <i>Clinical Colorectal Cancer</i> , 6(2), 133–139. doi: 10.3816/ccc.2006.n.030   | 5FU | High Dose LEV+5FU/CF     | 437 |
|                |   | 5FU | Standard Dose LEV+5FU/CF | 441 |
| S9415          | Poplin, E. A., Benedetti, J. K., Estes, N. C., Haller, D. G., Mayer, R. J., Goldberg, R. M., ... Macdonald, J. S. (2005). Phase III Southwest Oncology Group 9415/Intergroup 0153 Randomized Trial of Fluorouracil, Leucovorin, and Levamisole Versus Fluorouracil Continuous Infusion and Levamisole for Adjuvant Treatment of Stage III and High-Risk Stage II Colon Cancer. <i>Journal of Clinical Oncology</i> , 23(9), 1819–1825. doi: 10.1200/jco.2005.04.169 | 5FU | 5FU/LV+LEV               | 632 |
|                |   | 5FU | CI 5FU/LV                | 556 |
| C02            | Wolmark, N., Rockette, H., Wickerham, D. L., Fisher, B., Redmond, C., Fisher, E. R., ... Frazier, T. (1990). Adjuvant therapy of Dukes A, B, and C adenocarcinoma of the colon with portal-vein fluorouracil hepatic infusion: preliminary results of National Surgical Adjuvant Breast and Bowel Project Protocol C-02. <i>Journal of Clinical Oncology</i> , 8(9), 1466–1475. doi: 10.1200/jco.1990.8.9.1466  | 5FU | Surg+5-FU                | 342 |

|                   |  |     |                   |      |
|-------------------|--|-----|-------------------|------|
| C03               | Wolmark, N., Rockette, H., Fisher, B., Wickerham, D. L., Redmond, C., Fisher, E. R., ... Jochimsen, P. (1993). The benefit of leucovorin-modulated fluorouracil as postoperative adjuvant therapy for primary colon cancer: results from National Surgical Adjuvant Breast and Bowel Project protocol C-03. <i>Journal of Clinical Oncology</i> , 11(10), 1879–1887. doi: 10.1200/jco.1993.11.10.1879  | 5FU | 5-FU+Leuc         | 519  |
|                   |  | 5FU | MOF               | 523  |
| C04 (v 1)         | Wolmark, N., Rockette, H., Mamounas, E., Jones, J., Wieand, S., Wickerham, D., ... Fisher, B. (1999). Clinical Trial to Assess the Relative Efficacy of Fluorouracil and Leucovorin, Fluorouracil and Levamisole, and Fluorouracil, Leucovorin, and Levamisole in Patients With Dukes B and C Carcinoma of the Colon: Results From National Surgical Adjuvant Breast and Bowel Project C-04. <i>Journal of Clinical Oncology</i> , 17(11), 3553–3559. doi: 10.1200/jco.1999.17.11.3553 | 5FU | 5FU+LEV           | 693  |
|                   |  | 5FU | 5FU+LV            | 693  |
|                   |  | 5FU | 5FU+LV+LEV        | 697  |
| C05               | Wolmark, N., Bryant, J., Smith, R., Grem, J., Allegra, C., Hyams, D., ... Fisher, B. (1998). Adjuvant 5-Fluorouracil and Leucovorin With or Without Interferon Alfa-2a in Colon Carcinoma: National Surgical Adjuvant Breast and Bowel Project Protocol C-05. <i>JNCI Journal of the National Cancer Institute</i> , 90(23), 1810–1816. doi: 10.1093/jnci/90.23.1810   | 5FU | 5FU+LV            | 1070 |
|                   |  | 5FU | 5FU+LV+Interferon | 1066 |
| GERCOR            | André, T., Colin, P., Louvet, C., Gamelin, E., Bouche, O., Achille, E., ... Gramont, A. D. (2003). Semimonthly Versus Monthly Regimen of Fluorouracil and Leucovorin Administered for 24 or 36 Weeks as Adjuvant Therapy in Stage II and III Colon Cancer: Results of a Randomized Trial. <i>Journal of Clinical Oncology</i> , 21(15), 2896–2903. doi: 10.1200/jco.2003.10.065  | 5FU | 5FU+LV            | 439  |
|                   |  | 5FU | FUFOL             | 442  |
| INT-0089 (v HDLV) | Haller, D. G., Catalano, P. J., Macdonald, J. S., O'Rourke, M. A., Frontiera, M. S., Jackson, D. V., & Mayer, R. J. (2005). Phase III Study of Fluorouracil,   | 5FU | HDLV              | 838  |
|                   |  | 5FU | LEV               | 829  |

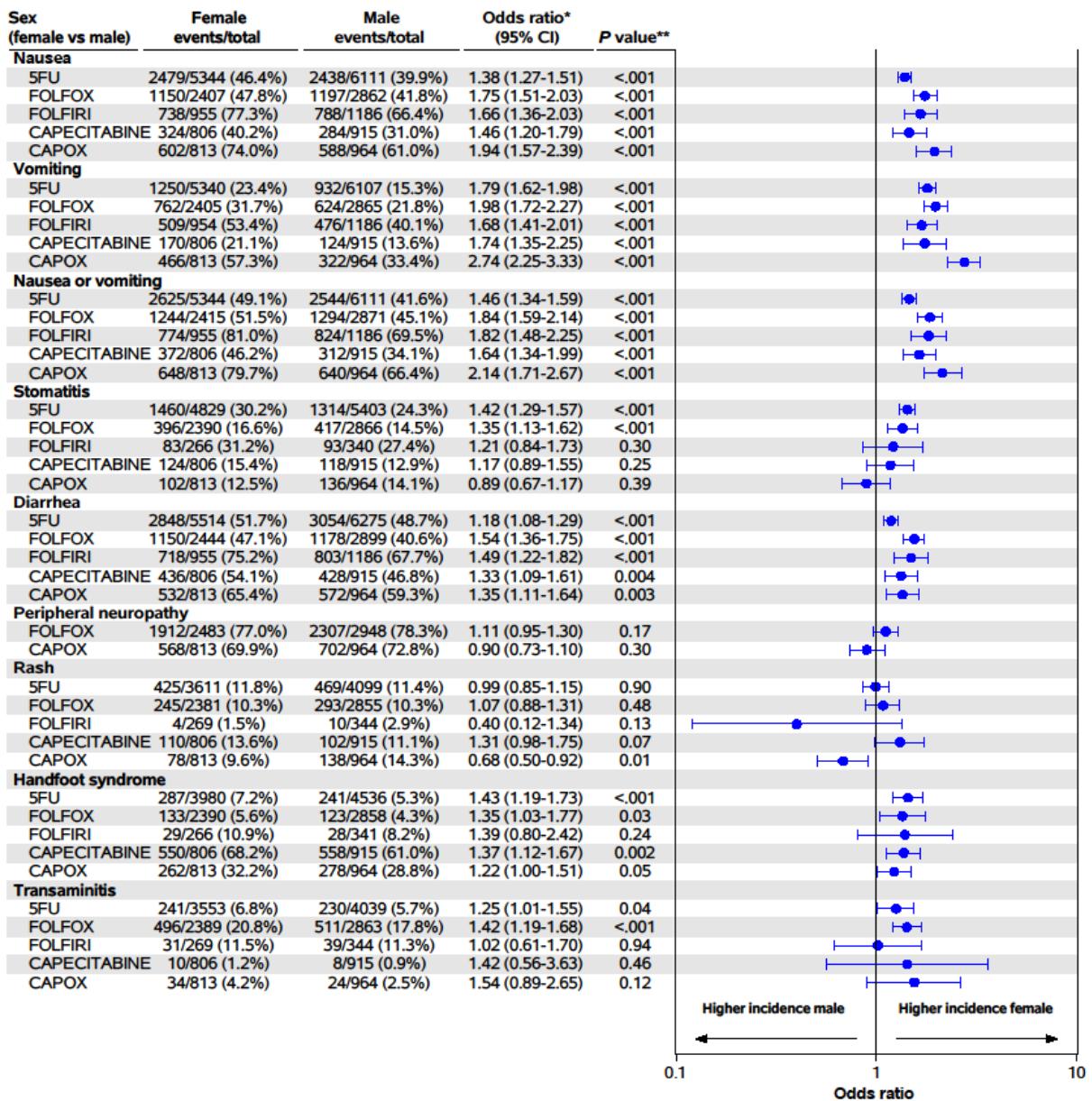
|        |   |              |                    |      |
|--------|---|--------------|--------------------|------|
|        | Leucovorin, and Levamisole in High-Risk Stage II and III Colon Cancer: Final Report of Intergroup 0089. <i>Journal of Clinical Oncology</i> , 23(34), 8671–8678. doi: 10.1200/jco.2004.00.5686  | 5FU          | LDLV               | 841  |
|        |   | 5FU          | LEV+LDLV           | 821  |
| MOSAIC | André, T., Boni, C., Mounedji-Boudiaf, L., Navarro, M., Tabernero, J., Hickish, T., ... de Gramont, A. (2004). Oxaliplatin, Fluorouracil, and Leucovorin as Adjuvant Treatment for Colon Cancer. <i>New England Journal of Medicine</i> , 350(23), 2343–2351. doi: 10.1056/nejmoa032709   | 5FU          | LV5FU2             | 1095 |
|        |   | FOLFOX       | LV5FU2+OXALIPLATIN | 1105 |
| XACT   | Twelves, C., Wong, A., Nowacki, M., Abt, M., Burris, H., Carrato, A., ... Scheithauer, W. (2005). Capecitabine as Adjuvant Treatment for Stage III Colon Cancer. <i>The New England Journal of Medicine</i> , 352(26), 2696–2704.   | 5FU          | 5-FU + LEUCOVORIN  | 1868 |
|        |   | CAPECITABINE | CAPECITABINE       | 1914 |
| C06    | Lembersky, B. C., Wieand, H. S., Petrelli, N. J., OConnell, M. J., Colangelo, L. H., Smith, R. E., ... Wolmark, N. (2006). Oral Uracil and Tegafur Plus Leucovorin Compared With Intravenous Fluorouracil and Leucovorin in Stage II and III Carcinoma of the Colon: Results From National Surgical Adjuvant Breast and Bowel Project Protocol C-06. <i>Journal of Clinical Oncology</i> , 24(13), 2059–2064. doi: 10.1200/jco.2005.04.7498 | 5FU          | 5-FU+Leuc          | 776  |
| C07    | Kuebler, J. P., Wieand, H. S., OConnell, M. J., Smith, R. E., Colangelo, L. H., Yothers, G., ... Wolmark, N. (2007). Oxaliplatin Combined With Weekly Bolus Fluorouracil and Leucovorin As Surgical Adjuvant Chemotherapy for Stage II and III Colon Cancer: Results From NSABP C-07. <i>Journal of Clinical Oncology</i> , 25(16), 2198–2204. doi: 10.1200/jco.2006.08.2974  | 5FU          | 5-FU+Leuc          | 778  |
|        |   | FOLFOX       | FLOX               | 773  |
| C89803 | Saltz, L. B., Niedzwiecki, D., Hollis, D., Goldberg, R. M., Hantel, A., Thomas, J. P., ... Mayer, R. J. (2007). Irinotecan Fluorouracil Plus Leucovorin Is Not  | 5FU          | 5FU/LV             | 620  |

|                  |  |         |               |      |
|------------------|--|---------|---------------|------|
|                  | Superior to Fluorouracil Plus Leucovorin Alone As Adjuvant Treatment for Stage III Colon Cancer: Results of CALGB 89803. <i>Journal of Clinical Oncology</i> , 25(23), 3456–3461. doi: 10.1200/jco.2007.11.2144  | FOLFIRI | CPT11/5FU/LV  | 630  |
| PETACC3          | Van Cutsem, E., Labianca, R., Bodoky, G., Barone, C., Aranda, E., Nordlinger, B., ... Cunningham, D. (2009). Randomized Phase III Trial Comparing Biweekly Infusional Fluorouracil/Leucovorin Alone or With Irinotecan in the Adjuvant Treatment of Stage III Colon Cancer: PETACC-3. <i>Journal of Clinical Oncology</i> , 27(19), 3117–3125. doi: 10.1200/jco.2008.21.6663                   | 5FU     | 5FU/FA Alone  | 1605 |
|                  |  | FOLFIRI | CPT-11+5FU/FA | 1583 |
| XELOXA (N016968) | Schmoll, H.-J., Tabernero, J., Maroun, J., De Braud, F., Price, T., Van Cutsem, E., ... Haller, D. G. (2015). Capecitabine Plus Oxaliplatin Compared With Fluorouracil/Folinic Acid As Adjuvant Therapy for Stage III Colon Cancer: Final Results of the N016968 Randomized Controlled Phase III Trial. <i>Journal of Clinical Oncology</i> , 33(32), 3733–3740. doi: 10.1200/jco.2015.60.9107 | 5FU     | 5-FU/LV       | 1812 |
|                  |  | CAPOX   | XELOX         | 1864 |
| C08              | Allegra, C. J., Yothers, G., Oconnell, M. J., Sharif, S., Petrelli, N. J., Colangelo, L. H., ... Wolmark, N. (2011). Phase III Trial Assessing Bevacizumab in Stages II and III Carcinoma of the Colon: Results of NSABP Protocol C-08. <i>Journal of Clinical Oncology</i> , 29(1), 11–16. doi: 10.1200/jco.2010.30.0855  | FOLFOX  | mFOLFOX6      | 1317 |
| PETACC8          | Taieb, J., Tabernero, J., Mini, E., Subtil, F., Folprecht, G., Van Laethem, J.-L., ... Lepage, C. (2014). Oxaliplatin, fluorouracil, and leucovorin with or without cetuximab in patients with resected stage III colon cancer (PETACC-8): an open-label, randomised phase 3 trial. <i>The Lancet Oncology</i> , 15(8), 862–873. doi: 10.1016/s1470-2045(14)70227-x                            | FOLFOX  | FOLFOX        | 1263 |
| N0147            | Alberts, S., Sargent, D., Nair, S., Mahoney, M., Mooney, M., Thibodeau, S., ... Goldberg, R. (2012). Effect of Oxaliplatin, Fluorouracil, and Leucovorin   | FOLFOX  | FOLFOX        | 476  |

|       |  |        |          |     |
|-------|--|--------|----------|-----|
|       | With or Without Cetuximab on Survival Among Patients With Resected Stage III Colon Cancer. <i>Jama</i> , 307(13), 1383–1393. doi: 10.1001/jama.2012.385  |        |          |     |
| AVANT | De Gramont, A., Van Cutsem, E., Schmoll, H.-J., Tabernero, J., Clarke, S., Moore, M. J., ... Hoff, P. M. (2012). Bevacizumab plus oxaliplatin-based chemotherapy as adjuvant treatment for colon cancer (AVANT): a phase 3 randomised controlled trial. <i>The Lancet Oncology</i> , 13(12), 1225–1233. doi: 10.1016/s1470-2045(12)70509-0 | FOLFOX | FOLFOX-4 | 935 |



**Supplemental Figure 1.** Adjusted Odds Ratios (95% confidence intervals) for grade I-IV hematological toxicities (log base 10 scale). \*Stratified by study and treatment arm, adjusted for age, stage grade, PS, and BMI; \*\*Stratified Wald p-value; 5FU=Fluorouracil therapy, FOLFOX=Leucovorin + Fluorouracil + Oxaliplatin therapy, CAPOX=Capecitabine + Oxaliplatin therapy, CI=Confidence Interval, PS=Performance Status, BMI=Body Mass Index



**Supplemental Figure 2.** Adjusted Odds ratios (95% confidence intervals) for grade I-IV non-hematological toxicities (log base 10 scale). \*Stratified by study and treatment arm, adjusted for age, stage grade, PS, and BMI; \*\*Stratified Wald p-value; 5FU=Fluorouracil therapy, FOLFOX=Leucovorin + Fluorouracil + Oxaliplatin therapy, CAPOX=Capecitabine + Oxaliplatin therapy, CI=Confidence Interval, PS=Performance Status, BMI=Body Mass Index