## **Supplement materials**

## **Supplement table 1.** Patients underwent a radical surgery with measurable DFS

| Sample | Age | Gender | Primary | Perineural | Vascular | Histologic grade | T stage | N stage | NCCN  | Tissue | Tissue   | Outcome | DFS    |
|--------|-----|--------|---------|------------|----------|------------------|---------|---------|-------|--------|----------|---------|--------|
| ID     |     |        | tumor   | invasion   | tumor    |                  |         |         | stage | KRAS   | Mutation |         | (days) |
|        |     |        | site    |            | thrombu  |                  |         |         |       |        |          |         |        |
|        |     |        |         |            | S        |                  |         |         |       |        |          |         |        |
| CC045  | 55  | M      | Rectum  | Y          | Y        | moderately       | Т3      | N2      | IIIB  | N      | N        | PD      | 155    |
|        |     |        |         |            |          | differentiated   |         |         |       |        |          |         |        |
| CC062  | 68  | M      | Rectum  | Y          | Y        | poorly           | Т3      | N2a     | IIIB  | Y      | Y        | PD      | 247    |
|        |     |        |         |            |          | differentiated   |         |         |       |        |          |         |        |
| CC063  | 66  | M      | Rectum  | Y          | Y        | moderately       | Т3      | N1b     | IIIB  | N      | N        | PD      | 51     |
|        |     |        |         |            |          | differentiated   |         |         |       |        |          |         |        |
| CC064  | 69  | M      | Rectum  | Y          | N        | moderately       | Т3      | N1b     | IIIB  | Y      | Y        | PD      | 92     |
|        |     |        |         |            |          | differentiated   |         |         |       |        |          |         |        |
| CC065  | 77  | M      | Rectum  | N          | N        | moderately       | Т3      | N1a     | IIIB  | N      | N        | PD      | 1837   |
|        |     |        |         |            |          | differentiated   |         |         |       |        |          |         |        |
| CC070  | 79  | F      | Rectum  | Y          | Y        | moderately       | Т3      | N1      | IIIB  | Y      | Y        | PD      | 60     |
|        |     |        |         |            |          | differentiated   |         |         |       |        |          |         |        |

| CC071 | 65 | F | Descendi | N  | N  | NA             | T2 | N2b | IIIA | N | N | PD | 106  |
|-------|----|---|----------|----|----|----------------|----|-----|------|---|---|----|------|
|       |    |   | ng colon |    |    |                |    |     |      |   |   |    |      |
| CC075 | 53 | F | Rectum   | N  | N  | moderately     | TX | N1a | NA   | N | N | PD | 519  |
|       |    |   |          |    |    | differentiated |    |     |      |   |   |    |      |
| CC076 | 66 | M | Descendi | N  | N  | moderately     | T3 | N1b | IIIB | N | N | PD | 417  |
|       |    |   | ng colon |    |    | differentiated |    |     |      |   |   |    |      |
| CC077 | 70 | M | colon    | Y  | N  | NA             | T3 | N0  | IIA  | N | N | PD | 1100 |
| CC079 | 43 | M | Descendi | N  | N  | moderately     | T3 | N1b | IIIB | N | N | SD | 979  |
|       |    |   | ng colon |    |    | differentiated |    |     |      |   |   |    |      |
| CC081 | 71 | F | Descendi | N  | N  | moderately     | T3 | N0  | IIA  | N | N | PD | 322  |
|       |    |   | ng colon |    |    | differentiated |    |     |      |   |   |    |      |
| CC084 | 63 | M | colon    | N  | N  | moderately     | T3 | N2  | IIIB | Y | Y | PD | 365  |
|       |    |   |          |    |    | differentiated |    |     |      |   |   |    |      |
| CC086 | 68 | M | Rectum   | Y  | Y  | moderately     | T3 | N1  | IIIB | Y | Y | PD | 648  |
|       |    |   |          |    |    | differentiated |    |     |      |   |   |    |      |
| CC089 | 52 | M | Rectum   | NA | NA | poorly         | T3 | N2  | IIIB | N | N | PD | 637  |
|       |    |   |          |    |    | differentiated |    |     |      |   |   |    |      |

| CC091 | 67 | M | Rectum   | N  | N  | moderately     | T2 | N2  | IIIB | Y | Y | PD | 203  |
|-------|----|---|----------|----|----|----------------|----|-----|------|---|---|----|------|
|       |    |   |          |    |    | differentiated |    |     |      |   |   |    |      |
| CC102 | 76 | M | Sigmoid  | NA | NA | moderately     | T2 | N0  | I    | N | Y | PD | 1360 |
|       |    |   | colon    |    |    | differentiated |    |     |      |   |   |    |      |
| CC106 | 61 | M | Rectum   | Y  | N  | moderately     | Т3 | N2a | IIIB | N | N | SD | 670  |
|       |    |   |          |    |    | differentiated |    |     |      |   |   |    |      |
| CC111 | 50 | F | Sigmoid  | Y  | NA | moderately     | T4 | N1  | IIIB | Y | Y | PD | 303  |
|       |    |   | colon    |    |    | differentiated |    |     |      |   |   |    |      |
| SOP22 | 74 | M | Ascendi  | N  | N  | moderately     | Т3 | N2  | IIIB | Y | Y | PD | 578  |
|       |    |   | ng colon |    |    | differentiated |    |     |      |   |   |    |      |
| SOP25 | 52 | M | Rectum   | N  | Y  | moderately     | T3 | N1  | IIIB | N | N | PD | 350  |
|       |    |   |          |    |    | differentiated |    |     |      |   |   |    |      |
| SOP27 | 55 | M | Rectum   | N  | N  | moderately     | T3 | N1  | IIIB | N | N | PD | 655  |
|       |    |   |          |    |    | differentiated |    |     |      |   |   |    |      |
| SOP29 | 60 | M | Sigmoid  | N  | N  | moderately     | T3 | N0  | IIA  | N | N | PD | 692  |
|       |    |   | colon    |    |    | differentiated |    |     |      |   |   |    |      |
| SOP30 | 59 | F | Rectum   | N  | N  | NA             | T2 | N1  | IIIA | N | N | SD | 2841 |

| SOP41 61 M Rectum N Y moderately T3 N1b IIIB N N PI differentiated | 593  |
|--|------|
| differentiated   |      |
|  |      |
| SOP44 57 M Rectum N N moderately T4 N1 IIIB N N PI                 | 105  |
| differentiated   |      |
| SOP48 60 M Rectum N N NA T3 N1 IIIB N N PI                         | 65   |
| SOP49 74 F Sigmoid N N moderately T3 N1 IIIB N N PI                | 729  |
| colon differentiated   |      |
| SOP5 52 M Rectum NA NA NA T3 NO IIA N N PI                         | 182  |
| SOP50 55 M Ascendi N N moderately T3 N2 IIIB N N PI                | 73   |
| ng colon differentiated  |      |
| SOP51 71 F Rectum N Y moderately T3 N0 IIA Y Y PI                  | 932  |
| differentiated   |      |
| SOP56 52 F Rectum N N well T4 N1 IIIB Y Y PI                       | 1155 |
| differentiated   |      |
| SOP61 52 M Ascendi N N moderately T3 N0 IIA Y Y PI                 | 700  |
| ng colon differentiated  |      |
| SOP62 76 M Sigmoid N Y NA T4 N2 IIIC N N PI                        | 247  |
| colon  |      |

| SOP68 | 43 | F | Descendi | N | N | moderately     | TX | N1b | NA   | Y | Y | PD | 313 |
|-------|----|---|----------|---|---|----------------|----|-----|------|---|---|----|-----|
|       |    |   | ng colon |   |   | differentiated |    |     |      |   |   |    |     |
| SOP70 | 56 | M | Rectum   | Y | Y | moderately     | T3 | N2  | IIIB | Y | Y | PD | 271 |
|       |    |   |          |   |   | differentiated |    |     |      |   |   |    |     |
| SOP74 | 46 | M | Ascendi  | Y | N | NA             | T4 | N1  | IIIB | Y | Y | PD | 310 |
|       |    |   | ng colon |   |   |                |    |     |      |   |   |    |     |
| SOP77 | 51 | M | Sigmoid  | N | N | moderately     | T3 | N2  | IIIB | N | N | SD | 184 |
|       |    |   | colon    |   |   | differentiated |    |     |      |   |   |    |     |
| SOP80 | 62 | F | Sigmoid  | N | N | poorly         | TX | N2b | NA   | Y | Y | PD | 854 |
|       |    |   | colon    |   |   | differentiated |    |     |      |   |   |    |     |
| SOP89 | 61 | M | Descendi | Y | N | moderately     | T4 | N1a | IIIB | N | N | PD | 590 |
|       |    |   | ng colon |   |   | differentiated |    |     |      |   |   |    |     |

## **Supplement table 2.** Patients treatment in subsequent first line chemotherapy with measurable PFS

| Sample | Age | Sex | Primar | Perineural | Vascular | Histologic     | Number     | T  | N   | NCCN  | Plasma | Plasma   | Outcome | PFS    |
|--------|-----|-----|--------|------------|----------|----------------|------------|----|-----|-------|--------|----------|---------|--------|
| ID     |     |     | y      | Invasion   | tumor    | Grade          | of         |    |     | stage | KRAS   | Mutation |         | (days) |
|        |     |     | Tumor  |            | Thrombus |                | metastatic |    |     |       |        |          |         |        |
|        |     |     | Site   |            |          |                | site       |    |     |       |        |          |         |        |
| CC052  | 59  | F   | Rectum | N          | N        | well           | 2          | T2 | NX  | IV    | Y      | Y        | PD      | 141    |
|        |     |     |        |            |          | differentiated |            |    |     |       |        |          |         |        |
| CC062  | 68  | M   | Rectum | Y          | Y        | poorly         | 1          | T3 | N2a | IV    | Y      | Y        | SD      | 147    |
|        |     |     |        |            |          | differentiated |            |    |     |       |        |          |         |        |
| CC064  | 69  | M   | Rectum | Y          | N        | moderately     | 2          | T3 | N1b | IV    | Y      | Y        | PD      | 204    |
|        |     |     |        |            |          | differentiated |            |    |     |       |        |          |         |        |
| CC065  | 77  | M   | Rectum | N          | N        | moderately     | 1          | T3 | N1a | IV    | N      | N        | SD      | 126    |
|        |     |     |        |            |          | differentiated |            |    |     |       |        |          |         |        |
| CC068  | 62  | M   | Rectum | N          | N        | NA             | 2          | T2 | N1  | IV    | N      | N        | PD      | 302    |
| CC070  | 79  | F   | Rectum | Y          | Y        | moderately     | 1          | T3 | N1  | IV    | N      | N        | PD      | 50     |
|        |     |     |        |            |          | differentiated |            |    |     |       |        |          |         |        |

| CC071 | 65 | F | Descen  | N  | N  | NA             | 1 | T2 | N2b | IV | N | N | PD | 357  |
|-------|----|---|---------|----|----|----------------|---|----|-----|----|---|---|----|------|
|       |    |   | ding    |    |    |                |   |    |     |    |   |   |    |      |
|       |    |   | colon   |    |    |                |   |    |     |    |   |   |    |      |
| CC074 | 80 | M | Transv  | N  | N  | moderately     | 1 | T3 | N1b | IV | N | N | SD | 272  |
|       |    |   | erse    |    |    | differentiated |   |    |     |    |   |   |    |      |
|       |    |   | colon   |    |    |                |   |    |     |    |   |   |    |      |
| CC077 | 70 | M | colon   | Y  | N  | NA             | 3 | Т3 | N0  | IV | N | Y | PD | 49   |
| CC081 | 71 | F | Descen  | N  | N  | moderately     | 2 | T3 | N0  | IV | N | N | SD | 1308 |
|       |    |   | ding    |    |    | differentiated |   |    |     |    |   |   |    |      |
|       |    |   | colon   |    |    |                |   |    |     |    |   |   |    |      |
| CC084 | 63 | M | colon   | N  | N  | moderately     | 1 | T3 | N2  | IV | Y | Y | PD | 44   |
|       |    |   |         |    |    | differentiated |   |    |     |    |   |   |    |      |
| CC086 | 68 | M | Rectum  | Y  | Y  | moderately     | 1 | T3 | N1  | IV | Y | Y | SD | 598  |
|       |    |   |         |    |    | differentiated |   |    |     |    |   |   |    |      |
| CC091 | 67 | M | Rectum  | N  | N  | moderately     | 2 | T2 | N2  | IV | Y | Y | PD | 350  |
|       |    |   |         |    |    | differentiated |   |    |     |    |   |   |    |      |
| CC102 | 76 | M | Sigmoi  | NA | NA | moderately     | 2 | T2 | N0  | IV | N | N | PD | 443  |
|       |    |   | d colon |    |    | differentiated |   |    |     |    |   |   |    |      |

| CC108 | 57 | M | Rectum  | Y | Y | moderately     | 2 | T4 | N2 | IV | N | N | SD | 609 |
|-------|----|---|---------|---|---|----------------|---|----|----|----|---|---|----|-----|
|       |    |   |         |   |   | differentiated |   |    |    |    |   |   |    |     |
| SOP22 | 74 | M | Ascend  | N | N | moderately     | 3 | T3 | N2 | IV | N | N | SD | 487 |
|       |    |   | ing     |   |   | differentiated |   |    |    |    |   |   |    |     |
|       |    |   | colon   |   |   |                |   |    |    |    |   |   |    |     |
| SOP25 | 52 | M | Rectum  | N | Y | moderately     | 2 | T3 | N1 | IV | N | N | PD | 281 |
|       |    |   |         |   |   | differentiated |   |    |    |    |   |   |    |     |
| SOP27 | 55 | M | Rectum  | N | N | moderately     | 2 | T3 | N1 | IV | N | N | SD | 518 |
|       |    |   |         |   |   | differentiated |   |    |    |    |   |   |    |     |
| SOP29 | 60 | M | Sigmoi  | N | N | moderately     | 2 | T3 | N0 | IV | N | N | PD | 111 |
|       |    |   | d colon |   |   | differentiated |   |    |    |    |   |   |    |     |
| SOP44 | 57 | M | Rectum  | N | N | moderately     | 3 | T4 | N1 | IV | N | N | PD | 264 |
|       |    |   |         |   |   | differentiated |   |    |    |    |   |   |    |     |
| SOP49 | 74 | F | Sigmoi  | N | N | moderately     | 3 | T3 | N1 | IV | N | N | SD | 270 |
|       |    |   | d colon |   |   | differentiated |   |    |    |    |   |   |    |     |
| SOP51 | 71 | F | Rectum  | N | Y | moderately     | 1 | T3 | N0 | IV | Y | Y | PD | 239 |
|       |    |   |         |   |   | differentiated |   |    |    |    |   |   |    |     |

| SOP56 | 52 | F | Rectum | N | N | well           | 1 | T4 | N1  | IV | N | N | SD | 451 |
|-------|----|---|--------|---|---|----------------|---|----|-----|----|---|---|----|-----|
|       |    |   |        |   |   | differentiated |   |    |     |    |   |   |    |     |
| SOP61 | 52 | M | Ascend | N | N | moderately     | 1 | T3 | N0  | IV | Y | Y | PD | 259 |
|       |    |   | ing    |   |   | differentiated |   |    |     |    |   |   |    |     |
|       |    |   | colon  |   |   |                |   |    |     |    |   |   |    |     |
| SOP63 | 82 | F | Transv | N | N | moderately     | 3 | T4 | NX  | IV | Y | Y | PD | 44  |
|       |    |   | erse   |   |   | differentiated |   |    |     |    |   |   |    |     |
|       |    |   | colon  |   |   |                |   |    |     |    |   |   |    |     |
| SOP70 | 56 | M | Rectum | Y | Y | moderately     | 2 | T3 | N2  | IV | Y | Y | SD | 158 |
|       |    |   |        |   |   | differentiated |   |    |     |    |   |   |    |     |
| SOP89 | 61 | M | Descen | Y | N | moderately     | 1 | T4 | N1a | IV | N | N | SD | 59  |
|       |    |   | ding   |   |   | differentiated |   |    |     |    |   |   |    |     |
|       |    |   | colon  |   |   |                |   |    |     |    |   |   |    |     |