Supplementary Material

**The Complex Puzzle of Interactions among Functional Food, Gut Microbiota and Colorectal Cancer**

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# 1 Supplementary Table 2

**Table 2.** Functional foods, BFC constituents, used in the treatment of CRC

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| --- | --- | --- | --- | --- |
| **Biological assay** | | | | |
| * **Functional Food** | * **Bioactive Substance** | **Probable bioactive effect** | **Population** | * **Ref.** |
| Flaxseed | * Polyunsaturated fatty acid (n-3) | Inhibition of angiogenesis caused by CRC | Nude (nu/nu) | * [95] |
| * Increased expression of FFAR4 in colon | Sprague–Dawley rats | * [96] |
| Phytic Acid  Inositol Hexaphosphate (IP6) | Inhibition of development of metastatic progression of CRC | BALB/c  (n = 48) | * [97] |
| Lignan | Decreased proliferation and increased apoptosis of tumor cells - CRC | * Caco-2 colon cancer cells | * [98] |
| Oat | *β* glucan | Prevention of CRC | * Kunming Mice | * [92] |
| Phenolic amides (Avenanthramides) | Reducing the risk of CRC | Caco-2 and HT29 colon cancer cells | * [99] |
| Induction of apoptosis of colon cells | HCT-116 human colon cancer cells | [7] |
| Soy | Isoflavone (Genistein and daidzein) | Suppression of colon cancer growth | Sprague–Dawley rats | * [100] |
| * Reducing the risk of CRC - Anti-cancer | Women  (n = 68.412) | * [101] |
| * Patients with CRC (n = 901) | * [102] |
| * Patients with CRC (n = 101) | * [93] |
| **Reviews and Other Studies** | | | | |
| * **Functional Food** | * **Bioactive Substance** | **Probable bioactive effect** | | * **Ref.** |
| Flaxseed | * Polyunsaturated fatty acid (n-3) | Blocks tumor formation | | * [103] |
| Deregulates the expression of genes involved in the CRC and alters the membrane lipid composition of tumor cells.  Reduction of proliferation and induction of apoptosis. | | * [104] |
| IP6 | Inhibition of the metastatic process in CRC | | * [96] |
| Lignanas   * (Secossolariciresinol diglucoside) | Reduction of proliferation and induction of tumor cell apoptosis | | * [103] |
| Modulates cellular signaling pathways | | * [105] |
| Antiproliferative and anti-angiogenesis protection | | * [106] |
| Phenolic amides (Avenanthramides) | Reducing the risk of CRC | | * [107] |
| Oat | *β* Glucan | Formation of short chain fatty acids (SCFA) that decrease intra-colonic pH, inhibiting pathogenic and toxic proliferation (Figure 2) | | * [108] |
| Soy | Isoflavone (Genistein and daidzein) | Inhibit cell proliferation and induce apoptosis; Decrease GLI1 expression | | * [109] [110] |
| Inhibition of MMP-9 (Matrix metallopeptidase 9) responsible for tumor progression | | * [111] |
| Saponins | Inhibition of MMP-9 and gelatinase B, responsible for tumor progression | | * [111] |