

**Supplementary Table 1 Clinical characteristics of CRC patients**

Gender	Age at diagnostic	Disease features
Female	70	Rectum adenocacinoma
Female	58	Papillary tubular adenocarcinoma
Male	81	Rectum adenocacinoma
Male	57	Tubular adenocarcinoma
Female	72	Tubular adenocarcinoma
Female	72	Rectum adenocacinoma

**Supplementary Table 2 ChIP-qPCR primers**

Gene	Forward (5'-3')	Reverse (5'-3')
<i>Usp21</i> -promoter	TCCCATGCTCATGTTCTCTTGC	GGCCCAGTCCTAGGAGAGATGTT

**Supplementary Table 3 qRT-PCR primers**

Gene	Forward (5'-3')	Reverse (5'-3')
<i>Usp21</i>	TGATGACTGAGCCAACCACC	CGTCCCAGCTCCAGTTTCTT
<i>Foxp3</i>	TCCTATCCCCTCCCCTGACAC	GCCTTGGTCAGTGCCATTTTC
<i>CD274</i>	ATTTGCTGAACGCCCCATAC	TTGGTGGTGGTGGTCTTACC
<i>Mdm2</i>	GGTGGGAGTGATCAAAGGA	ACACAGAGCCAGGCTTTCAT
<i>Stub1</i>	TACCTCTCCAGGCTCATTGC	TCTTGCCACACAGGTAGTCG
<i>Cblb</i>	CTGACAGGCAGAACTCACCA	AGACTTTGGTGAACCCGTTG
<i>Rnf31</i>	GTCGGAGCTGTGAGGACTTC	TCACCCTGCAGTTAGGCTCT
<i>Usp7</i>	GGAAGCGGGAGATACAGATGA	AAGGACCGACTCACTCAGTCT
<i>Usp44</i>	CTCAACCCTCAGAAATGGCAC	ACGTCGTAGTAACTTCAGGTCTC
<i>Usp22</i>	TGGAAATAATCGCCAAGGAG	GAAGCATGTGTTCCCAAGGT

**Supplementary Table 4 Summary of 31 small molecules down regulating FOXP3**

Names	Code
Procyanidin B2	A1-007
Chelerythrine	A1-106
Gallic acid	B1-061
Sinomenine	C1-053
Corynoxine	E1-012
Caffeic acid	E1-013

Liquiritigenin	E1-072
Palmitic acid	F1-001
Ginsenoside Rb2	H-011
Galantamine Hydrobromide	H-064
gallic acid ethanol ester	H-085
Benzalkonium chloride	J102
Sodium nitroferricyanide dihydrate	J140
Deferoxamine mesylate salt	J505
Daunorubicin hydrochloride	J403
(2,2-Dichloro-1,1-difluoroethyl) methyl ether	J312
(+)-Usniacin (D-Usnic acid)	L1700-07-A10
Limonin	L1700-15-E6
Ramelteon (TAK-375)	L1700-02-H8
Estrone	L1700-05-C2
Niacin (Nicotinic acid)	L1700-05-G8
Tiotropium Bromide hydrate	L1700-10-A5
Tizanidine HCl	L1700-13-C10
Cyclophosphamide monohydrate	L1700-14-H4
DL-Adrenaline	L1700-15-G2
Nicorandil (Ikorel)	L1700-06-F2
Bleomycin sulfate	L1700-02-E10
Fluconazole	L1700-03-C7
Ibutilide Fumarate	L2000-01-B7
Ticagrelor	L2000-03-G3
Bismuth Subcitrate Potassium	L2000-03-D5