

S1 Table. Samples used for validation process

Case No.	Tumor type	Checklist for validation	Total reads	Total bases (Mb)	Mapped bases (Mb)	Mapped bases (%)	On-target bases (Mb)	On-target (%)	Duplicated ratio	On-target coverage	Note
1	MUO	<i>APC</i> p.K1245*, <i>APC</i> p.Q1303*, <i>ATM</i> p.I1688T, <i>TP53</i> p.T125K, <i>KRAS</i> Amp	6,027,014	455	450	98.96	304	73	27.14	185.28	DIN 2.1
2	Skin cancer	MSI-high	11,198,598	845	840	99.34	521	69.28	11.69	402.3	
3	Ovary cancer	<i>KRAS</i> G12D, <i>ATM</i> p.M1087I, <i>TP53</i> p.C238_S240del, <i>ALK</i> p.A348T	11,957,256	902	895	99.13	567	69.48	15.89	413.21	
4	MUO	<i>NRAS</i> Q61R, <i>TP53</i> p.H179Y, <i>TP53</i> p.W53fs, <i>FLT3</i> p.G64R, <i>PTCHI</i> p.A741V, <i>SPOP</i> p.S330P, <i>SMARCB1</i> Amp	11,719,094	890	884	99.42	554	69.99	13.32	419.86	
5	Ovary cancer	<i>HER2</i> amplification	11,099,854	838	832	99.3	519	69.3	17.45	369.1	
6	Lung cancer	<i>EGFR</i> L858R	11,478,364	867	860	99.24	486	63.4	12.02	372.6	
7	Lung cancer	<i>EGFR</i> (p.E746_A750del), <i>EGFR</i> (p.T790M)	10,925,502	825	817	99.1	466	64.1	8.96	372.4	
8	Head and neck cancer	<i>HER2</i> amplification	11,389,586	860	853	99.26	489	64.47	9.72	387.63	
9	Lung cancer	<i>HER2</i> amplification	9,429,506	712	707	99.35	424	67.11	11.61	327.42	
10	Endometrial cancer	MSI-high	9,743,030	735	730	99.29	419	64.27	10.29	327.47	
11	Endometrial cancer	MSI-high	11,784,268	889	879	98.86	468	59.98	9.37	370.39	

	cancer									
12	Lung cancer	<i>EGFR</i> L858R	11,733,176	886	880	99.34	489	62.4	11.11	377.48
13	Lung cancer	<i>EGFR</i> (p.E746_A750del)	12,268,028	926	920	99.41	515	62.97	9.15	409.94
14	Lung cancer	<i>ALK</i> fusion	12,184,050	920	912	99.16	494	60.86	8.45	395.47
15	Thyroid	<i>BRAF</i> V600E	11,868,314	896	891	99.47	499	63.42	14.6	371
	cancer									
16	Lung cancer	<i>ROS1</i> fusion	11,706,980	883	877	99.31	546	69.29	12.63	417

DIN, DNA integrity number; MSI, microsatellite instability; MUO, metastasis of unknown origin.