

Supplemental Table 1 – Drugs, molecular targets and enrolled cancer types

Drug	Molecular targets allowed	Cancer types enrolled (n)				
Afatinib (Boehringer-Ingelheim)	Activating mutation or fusion of <i>NRG1</i>	NSCLC (1)				
	Activating mutations of <i>ERBB4</i>					
Axitinib (Pfizer)	Activating mutations or amplifications of <i>KDR (VEGFR2)</i> or <i>FLT4 (VEGFR3)</i>	CRC (1)				
Cabozantinib (Ipsen)	Activating mutations or amplifications of <i>MET, NTRK1/2</i>	Esophageal cancer (1)	NSCLC (1)			
	Activating mutation or fusion of <i>RET</i>	Melanoma (1)	Teratoma (1)			
Crizotinib (Pfizer)	Activating mutation, fusion or amplification of <i>ALK</i>	Bile duct cancer (1)	Inflammatory myofibroblastic tumor (3)			
	Activating mutation or amplification of <i>MET</i>	CRC (2)	NSCLC (17)			
	Fusion of <i>ROS1</i>	Esophageal cancer (1)	Thyroid cancer (1)			
Dabrafenib + Trametinib (Novartis)	Activating <i>BRAF V600D/E/K/R</i> mutations	GBM (3)	Low grade glioma (1)	Neuroendocrine carcinoma (1)	NSCLC (1)	
Dabrafenib monotherapy (Novartis)	Activating <i>BRAF V600D/E/K/R</i> mutations	GBM (2)	UCC (1)			
Durvalumab (AstraZeneca)	MSI tumors	Bile duct cancer (3)	CRC (9)	GBM (1)	Prostate cancer (1)	Stomach cancer (3)
		Breast cancer (2)	Endometrial cancer (1)	NEC (1)	Small intestine cancer (2)	
Erlotinib (Roche)	Activating mutation of <i>EGFR</i>	GBM (1)				
Lenvatinib (Eisai)	Activating mutations, fusions or amplification of <i>FGFR1/2/3/4</i>	ACC (1)	Breast cancer (6)	Endometrial cancer (2)	Sarcoma (1)	Urachal cancer (1)
		Anal cancer (1)	CRC (2)	Esophageal cancer (1)	Salivary gland cancer (1)	
		Bile duct cancer (2)	CUP (1)	NSCLC (7)	UCC (2)	
Nilotinib (Novartis)	Activating mutations or amplifications of <i>KIT, PDGFRA</i> or <i>PDGFRB</i>	CRC (1)	Melanoma (2)			
	Activating mutation of <i>ABL1</i>	GIST (11)	Mesothelioma (1)			
Nivolumab (BMS)	MSI or HML > 450 tumors	Atypical fibroxanthoma (1)	CRC (25)	Duodenal cancer (2)	NET (2)	cSCC (2)
		BCC (2)	Cervical cancer (1)	Endometrial cancer (5)	Prostate cancer (7)	UCC (3)
		Breast cancer (5)	CUP (2)	GBM (1)	RCC (1)	
Nivolumab + ipilimumab (BMS)	HML tumors	CRC (1)				
Olaparib (AstraZeneca)	Inactivating mutations or deletions of <i>ATM, BARD1, BRCA1/2, BRIP1, CDK12, CHEK1/2, FANCL, PALB2, PPP2R2A, RAD50, RAD51B, RAD51C, RAD51D</i> or <i>RAD54L</i>	ACC (2)	Breast cancer (5)	NSCLC (2)	RCC (1)	
		Adrenal cancer (1)	Carcinosaroma (1)	Ovarian cancer (3)	Small intestine cancer (1)	
		Appendix cancer (1)	CRC (7)	Pancreatic cancer (3)	UCC (2)	
		Bile duct cancer (2)	Endometrial cancer (2)	Prostate cancer (27)	Urachal cancer (1)	
Palbociclib (Pfizer)	Amplifications of <i>CCND1, CCND2, CDK4, CDK6, PIK3R4</i> or <i>GSK3b</i>	Bile duct cancer (4)	Esophageal cancer (3)	NET (1)	Pancreatic cancer (1)	Sarcoma (1)
	Activating mutations of <i>CDK4 R24</i> or <i>FLT3</i>	CRC (2)	GBM (9)	NSCLC (5)	PEComa (1)	(Uveal) melanoma (6)
	Inactivating mutations or deletions of <i>CDKN2A</i> or <i>SMARCA4</i>	Duodenal cancer (1)	HNSCC (1)	Ovarian cancer (1)	RCC (1)	
Panitumumab (Amgen)	No mutations of <i>KRAS, BRAF</i> or <i>NRAS</i>	Anal cancer (2)	Endometrial (2)	Meningioma (2)	Sarcoma (4)	Vulvar cancer (3)
		Cervical cancer (5)	GBM (4)	NSCLC (4)	Thyroid cancer (1)	
		CUP (1)	HNSCC (2)	Salivary gland cancer (1)	Uveal melanoma (3)	

Pembrolizumab (MSD)	HML > 140	Anal cancer (1)	Breast cancer (20)	Endometrial cancer (2)	HNSCC (3)	SCLC (6)
		BCC (1)	Cervical cancer (3)	Esophageal cancer (10)	Prostate cancer (3)	Small intestine cancer (1)
		Bile duct cancer (1)	CRC (12)	Gastric cancer (2)	Sarcoma (2)	Vulvar cancer (1)
Regorafenib (Bayer)	Activating mutations or amplification of <i>FLT1 (VEGFR 1)</i> , <i>KDR (VEGFR2)</i> , <i>FLT4 (VEGFR3)</i> , <i>KIT</i> , <i>PDGFRB</i> , <i>RAF1</i> , <i>CSF1R</i> or <i>CSF1 (M-CSF)</i> Activating mutation or fusion of <i>RET</i> Activating mutation of <i>BRAF</i>	Bladder cancer (1)	CUP (1)	Hidradenocarcinoma (1)	cSCC (1)	
		Esthesioneuroblastoma (1)	Thymus cancer (1)			
		Melanoma (1)				
Ribociclib (Novartis)	Amplifications of <i>CCND1</i> , <i>CCND2</i> , <i>CDK4</i> or <i>CDK6</i> Inactivating mutation or deletion of <i>CDKN2A</i>	Ependymoma (1)				
		Melanoma (1)				
Rucaparib (Clovis Oncology)	Inactivating mutations or deletions of <i>BRCA1/2</i> , <i>RAD51C</i> , <i>RAD51D</i> or <i>PALB2</i>	Pancreatic cancer (1)				
Sunitinib (Pfizer)	Amplification of <i>FGFR1/2/3</i> Activating mutations or amplifications of <i>CSF1R</i> , <i>FLT3</i> , <i>KDR (VEGFR2)</i> , <i>FLT4 (VEGFR3)</i> , <i>KIT</i> , <i>PDGFRA</i> , <i>PDGFRB</i> Activating mutation or fusion of <i>RET</i>	Breast cancer (1)	Thymus cancer (1)			
		Prostate cancer (1)	UCC (1)			
		Sarcoma (1)				
Trametinib monotherapy (Novartis)	Activating mutations of <i>MAP2K1</i> , <i>MAP2K2</i> , <i>MAP2K4</i> , <i>MAP3K1</i> , <i>NRAS</i>	Bile duct cancer (1)	CRC (3)	NSCLC (8)	Prostate cancer (1)	
		Breast cancer (2)	CUP (1)	Ovarian cancer (2)	Thyroid cancer (1)	
		Cervical cancer (1)	NEC (1)	Pleiomorphic carcinoma (1)		
Trastuzumab + pertuzumab (Roche)	Activating mutation or amplification of <i>ERBB2</i>	ACC (1)	Cervical cancer (3)	NSCLC (36)	UCC (7)	
		Bile duct cancer (8)	Hidradenocarcinoma (1)	Ovarian cancer (2)	Vulvar cancer (1)	
		CRC (11)	NEC (1)	Salivary duct cancer (5)		
Vemurafenib + cobimetinib (Roche)	Activating <i>BRAF V600D/E/K/R</i> mutations	CUP (2)	Ovarian cancer (2)	Salivary duct cancer (3)	Thyroid cancer (4)	
Vismodegib (Roche)	Inactivating mutation of <i>PTCH1</i>	Sarcoma (1)				

Abbreviations: MSI = microsatellite instability; HML = high mutational load (as determined by whole genome sequencing). GBM = glioblastoma; NSCLC = non-small cell lung cancer; SCLC = small cell lung cancer; UCC = urothelial cell cancer; CRC = colorectal cancer; ACC = adenoid cystic carcinoma; CUP = cancer of unknown primary; RCC = renal cell cancer; BCC = basal cell cancer; cSCC = cutaneous squamous cell carcinoma; HNSCC = head and neck squamous cell cancer